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JANUARY TO JUNE, 1930

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers read, officers

elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths. The subjects of editorials also appear alphabetically and are marked (E).

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ILLINOIS MEDICAL JOURNAL

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THE ILLINOIS STATE MEDICAL SOCIETY

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State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

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Editorials

HAPPY NEW YEAR!

For the thirty-first time the ILLINOIS MEDICAL JOURNAL sets down in black and white its sincerest wishes for a happy and prosperous twelvemonth to the medical profession.

With what may appear to be a trite insistence upon the point that "God helps those that help themselves" and a tedious repetition of the fact that now is the time for all good medicos to come to the aid of the profession, simple honesty demands the re-assertion. Neither this year nor any year hereafter will be either prosperous, or eventually endurable, if the medical profession does not at once begin upon the supreme effort to pull itself out of the fatal slough of lay dictation, state medicine and sovietized legislation.

Though the profession at large appears to have become slightly more cognizant of the menaces threatening both the public welfare and the science of medicine this awakening has not yet been followed by a sufficiently virile impetus to strive to remedy the situation. And even this awakening is almost offset by the friendly hand extended in many quarters to divert the practice of medicine from the qualified medical profession. It will be a sad day, indeed, for the public when medicine is no longer controlled and practiced by scientific medical men but rather by statutes, corporations and politicians.

As neither the ILLINOIS MEDICAL JOURNAL nor its editor is a pessimist, the belief maintains that the doctors will be as quick to rise in behalf of the emergency of the mother science as they would immediately come to heal when emergency arises in other households. As soon as the profession awakens to the real nature of the tumult within the ranks, there is no doubt but that the cause of the tumult will be stamped out. It is clear, however, that in some quarters this awakening will be delayed until a more shrill and raucous alarm bell than any we

have sounded, rings in the ears of many a well intentioned but sadly dozing doctor. Economics is no longer a thing apart from the medical profession. There are many problems of this nature to be tackled and conquered in the coming year. Among these must be mentioned schemes for minimizing the cost of medical education, the abolition of lay dictation, and last but far from least, that of medical practice by corporations and by those scientifically unqualified to traffic in the healing arts.

With these remedial determinations strong in mind, a prosperous New Year is certain of achievement for the profession, by the profession and with the profession.

THE 1930 ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY

The 1930 Annual meeting of the Illinois State Medical Society will be held in Joliet on May 20, 21, and 22, 1930. The Will-Grundy Medical Society, the host society, has started the arrangements for a highly successful meeting. Dr. B. G. Wilcox, Joliet, has been selected as General Chairman of the Arrangement Committee and has grouped into his committee, the following:

COMMITTEE ON ARRANGEMENTS

General Chairman, B. G. Wilcox.

Chairman, Reception Committee, E. A. Kingston.

Chairman, Committee on Meeting Places, R. Ahlvin.

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Chairman, Finance Committee, G. Houston.

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Chairman, Committee on Information and Hotels, R. B. Leach.

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Chairman, Transportation Committee, Walter Huey.

Chairman, Entertainment Committee, B. Klein.

Chairman, Committee on Exhibits, Raymond Brown.

Chairman, Woman's Auxiliary Committee, Marion B. Bowles.

Secretary and Treasurer of Committee, Paul E. Landmann.

It is the desire of the Committee on Arrangements to cooperate with the Illinois State Medical Society, its officers, the Council, and officers of Scientific Sections as thoroughly as possible in making the 1930 annual meeting one to be long remembered.

More definite plans concerning the 1930 Annual Meeting will be given out at an early date.

MEMBERS OF STATE SOCIETY WHO DESIRE TO READ PAPERS AT ANNUAL MEETING OF THE STATE SOCIETY

All members of the Illinois State Medical Society in good standing, who desire to present papers at the 1930 Annual Meeting of the Society in Joliet, May 20, 21, 22, 1930, should get in touch with the officers of the Section in which they are interested as early as possible. The subject of the paper, nature of same, or a synopsis should be submitted with the request. The number of papers to be presented in each section is limited, and the Section Officers are anxious to have their programs completed as early as possible. It is the usual custom to divide the number of papers in each section, between members in the Chicago Medical Society, and members of Down-state Societies.

The following are officers of the several sections:

SECTION ON MEDICINE

Dr. Frank Deneen, Chairman, Bloomington.

Dr. L. D. Snorf, Secretary, 25 East Washington Street, Chicago.

SECTION ON SURGERY

Dr. F. L. Brown, Chairman, 4034 West Madison Street, Chicago.

Dr. J. H. Bacon, Secretary, Peoria.

SECTION ON EYE, EAR, NOSE AND THROAT

Dr. Walter Stevenson, Chairman, Quincy.

Dr. Harry S. Gradle, Secretary, 58 East Washington St., Chicago.

SECTION ON PUBLIC HEALTH AND HYGIENE

Dr. John J. McShane, Chairman, Springfield.

Dr. Chas. H. Miller, Secretary, 826 East 61st Street, Chicago.

SECTION ON RADIOLOGY

Dr. I. S. Trostler, Chairman, 25 East Washington St., Chicago.

Dr. Henry W. Grote, Secretary, Bloomington.

SECRETARIES' CONFERENCE

Dr. W. H. Smith, President, Benton.

Dr. I. L. Foulon, Vice-President, East St. Louis.

Dr. W. D. Murfin, Secretary, Decatur.

It is the desire of each Section, to have the best program for 1930, that it is possible to get, and the papers must be carefully selected, which makes it necessary to submit as much information relative to the nature of same, as possible, so the programs can cover as wide a range as possible in each section.

DOCTORS DESIRING TO PRESENT PAPERS BEFORE THE 1930 MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY

TAKE NOTICE.

Members of the Illinois State Medical Society wishing to present papers before the Surgical Section at the next meeting in Joliet, Illinois, May 20, 21 and 22, 1930, kindly communicate with the undersigned.

The title and synopsis of the subject must be in the hands of the Secretary not later than January 15, 1930.

FRANK L. BROWN, M. D.,
Chairman, Section on Surgery,
4034 Madison St., Chicago, Ill.
JAY H. BACON, M. D.,
Peoria Life Insurance Bldg.,
Peoria, Ill.

MEMBERS DESIRING TO PRESENT PAPERS BEFORE THE SECTION OF PUBLIC HEALTH AND HYGIENE OF THE ILLINOIS STATE MEDICAL SOCIETY

Members of The Illinois State Medical Society wishing to present papers before the section on Public Health and Hygiene at the next meeting of the Illinois State Medical Society to be held May 20-22, 1930, kindly communicate with the undersigned.

The title and abstract of the subject should

be in the hands of the secretary not later than March 1, 1930.

(Signed) JOHN J. McSHANE, M. D.,
Chairman,
Springfield, Illinois.
CHARLES H. MILLER, M. D.,
Secretary,
826 East 61st Street,
Chicago, Illinois.

GIVE ENCOURAGEMENT TO THE MAN IN GENERAL PRACTICE

Public welfare demands the hastening of the day when the general practitioner shall come into his own. This does not mean a return of the faithful, romantic "old family doctor" of song and story but the vesting of the care of general human ailments in one man who shall be modern, well-educated, thoroughly up-to-date and well equipped mentally to care for the major portion of the ills that afflict mankind. This does not foretell the passing of the talented specialist whose skill at times amounts to genius, but it is the prophetic writing on the wall that means the downfall of the mediocre physician whose announcement that he is a "specialist" frequently betrays that the only thing about him that amounts to anything is his prices. Encouraging the man who is in general practice, and so instructing medical students in the necessity of maintaining a high degree of medical knowledge and skill will develop the growth of a class of specialists whose claim to the title and distinction arises from an all-round perception, prescience, knowledge and familiarity with the branch of medicine or of surgery in which they profess to excel, contrasted with present tendency to choose specialists from a group of men whose choice has suffered from the indecision or misinformation of immaturity, or from accident of environment or association. With more general practitioners of the right caliber, attending far more of the current and generic ailments of mankind, many perplexing problems of the medical profession and of medical organization will disappear. And let it be repeated, the foundations will be laid for a group of specialists whose grounding in the practice of medicine will prevail to make of them the most dreaded foes of disease and accident that the world has ever

known. They will co-operate with and not undermine the general practitioner and thus perpetuate the sanity and balance for which scientific medicine has always been the exponent.

REPORT OF THE EDUCATIONAL COMMITTEE FOR FOUR MONTHS, SEPTEMBER-DECEMBER, INCLUSIVE, SUBMITTED TO THE COUNCIL OF THE ILLINOIS STATE MEDICAL SOCIETY

Speakers' Bureau: Forty thousand people attended 143 meetings where subjects relating to "good health" were discussed by speakers scheduled through the office of the Educational Committee. The Illinois Federation of Women's Clubs, Young Mothers' Clubs, Men's groups, Auxiliaries to County Medical Society, Home Bureaus, Farmers' Institutes, Y. M. C. A.'s, Business and Professional Women's Clubs, University Clubs, Parent-Teacher Associations have all been served by the Speakers' Bureau during these four months.

Special assistance was given to organizations sponsoring public or community meetings. These meetings were well attended and the interest good. Over four hundred women attended the public meeting which was sponsored by the Woman's Club of Paris and the chairman reported "The Doctor gave a wonderfully interesting and educational talk, and the close attention given him by the large crowd present speaks for itself."

Speakers were furnished by the Committee for 15 community meetings in one county where a diphtheria immunization campaign was being conducted.

Excellent talks were given by physicians before county teachers' institutes and high school assemblies. The latter were given during American Education Week and from the reports received these talks were appreciated by both students and faculty. Several lectures were given by colored physicians of Chicago before colored students in high schools and Parent-Teacher Associations at Cairo and Alton.

Four popular health talks, three illustrated with moving picture films, have been given at the South Chicago Y. M. C. A. and six more

are scheduled for 1930. About ninety business and industrial men have been present at each of these meetings.

Radio: Thirty-four health education talks have been given over radio stations WGN and WJJD. Copies of these talks covering the following subjects are on file in the office of the Committee.

High Blood Pressure—Don C. Sutton.

What the Public Should Know About Gastric Ulcers—Frank Smithies.

Nervousness—Cyril L. Hale.

Prenatal Care—D. A. Horner.

Care of the Baby—Arthur F. Abt.

The Menace of the Drinking Cup—F. P. Balmer.

An Aid to Vision—T. J. Williams.

Some Facts About the Gall Bladder—C. F. Sawyer.

Posture—S. C. Woldenberg.

Syphilis in Relation of the Wassermann Test—Mary H. Swan.

The Medical Museum—D. J. Davis.

Foreign Bodies in the Lung and Oesophagus—R. H. Good.

What, Why and How to Eat—Moses Sahud.

Headache—G. G. O'Brien.

Anemia—Charles Spencer Williamson.

Goiter—Louis D. Moorhead.

Health of the Child in School—Philip Rosenblum.

Social Diseases—Russell D. Herrold.

Health of the Adult—Edward H. Ochsner.

The Most Valuable Things in the World—Francis P. Hammond.

Subnormals—Axel F. Benson.

Why Babies Cry—Abraham Levinson.

Diabetes—Charles H. Miller.

Anti-Vivisection—William F. Peterson.

The History of Spectacles—James E. Lebensohn.

Sinus Infection—Roy C. McLaughlin.

The Periodic Health Check-Up—Fred L. Glen.

Infections—Charles H. Parkes.

Early Care of Cross Eye—Charles G. Darling.

Hernia—William J. Pickett.

The Most Favorable Diet for Maintaining Health—A. H. Hallmann.

Some Troubles of Children — Charles J. Drueck.

Scientific Service: Thirty-six physicians presented scientific papers on the following subjects before 21 different county medical societies.

Gastro Intestinal Diseases, Standardization of Treatment of Fractures, Diagnosis and Surgical Treatment of Pulmonary Suppuration, Sex Gland Hormones, Results of Obstruction of the Lower Urinary Tract, Surgery, Obstetrics in General Practice, Puerperal Care, Medical Aspects of Gall Bladder Disease, Arthritis, Caudal and Trans Sacral Block, Prophylactic Care During Infancy, Essentials in the Care and Feeding of the Newborn, Common Diseases of the Skin, Endocrine Disturbances Occurring in General Practice, Bone and Joint Subject, Some Therapeutic Principles Involved in Use of Radium and X-ray, Treatment of Hemorrhoids by Non-Surgical and Operative Methods, Cancer, the Old Man and His Prostate, Diagnosis and Treatment of Acute Intestinal Obstruction, Nephritis in Children, Uterine Hemorrhage, Endocrine Factors in Common Colds.

Dr. Camp has sent to all county secretaries a list of physicians who have agreed to assist the Scientific Service Committee and the subjects they have consented to present to medical societies of Illinois. The Educational Committee has assisted some counties in securing better attendance. 725 news items announcing meetings of these societies have been released to newspapers in Illinois, Indiana, Missouri and Iowa.

Press Service: 2,652 news articles were released to newspapers during the months of September, October, November and December. This number included notices of special meetings, the regular meetings of the Chicago Medical Society and its Branches, and the health educational column which is now supplied to about 100 newspapers in Illinois.

56 educational articles have been written about: Contagious Diseases and School, Are You Worried About Your Health? Gallbladder Trouble, Correct Posture, Menace of the Drinking Cup, Sore Throat, How Does Your School Measure Up? Lead Poisoning, That First Cold. What to do Before the Doctor Comes, First Aid for Wounds, Diseases Transmitted to Man by Animals, Influenza—A Health Problem, How and Why of Blood Transfusions, Sinus Infec-

tion, Thumb Sucking, Worms in Children, Paralysis, Cold Weather Skin Troubles, Guard Against Whooping Cough, Beware of Deadly Gas in Closed Garage, Winter Clothing, Can a Mother "Mark" Her Child? Scarlet Fever, Diabetes, Cold Weather and Winter Ailments, the Oyster Season, Heart Disease, Outdoor Sleeping, Shingles, Croup, Faulty Eating Habits in Children, Health Habits, Chapter from Medical History, Menace of Heart Disease, Animals and the Advancement of Medical Science, Ultraviolet Abuse, Botulism, Water Drinking, Septicemia, That New Style, Your Teeth May Be to Blame, Trench Mouth, a Social Disease, Be Careful What You Swallow, Airplane and Radio in the Health Field, Home Care of the Sick, Ringworm of the Scalp, Tularemia, Value of God Liver Oil, Pneumonia, Frost Bite, Bad Year for Diphtheria, Rheumatism or Arthritis, Smallpox Warning, Eating to be Well.

Miscellaneous: More than 5,000 clippings were received and filed in the office of the Committee. Physicians of Illinois are invited to make use of these files where information on almost every health topic may be found.

185 package libraries have been sent out to speakers.

Films have been secured for lay groups and physicians. These were loaned by the State Department of Public Health, the American Society for the Control of Cancer, the Metropolitan Life Insurance Company. The Committee will gladly order films or other illustrative health material for schools or clubs.

The Committee has outlined a program for cooperation with the Chicago Woman's Club in the matter of education of the public to the early danger signals of cancer.

Cooperation is also being given the Chicago Council of Jewish Women in furnishing speakers to give talks on cancer before the 81 clubs in the Council and in scheduling speakers to give talks before mothers of school children in certain sections of the city. Through this Council the Committee is also furnishing health plays, songs, films, etc., to these schools.

Material is being collected for some of the Women's Auxiliaries who are forming groups to study questions of particular interest to the medical profession.

The Committee assisted one county in paving

the way for the establishment of a county health organization as outlined by the Child Hygiene Advisory Council of the State Department of Public Health.

JEAN McARTHUR,
Secretary.

GLEN FRANK, PRESIDENT OF THE UNIVERSITY OF WISCONSIN, STATES THAT THE GREATEST OPPORTUNITIES IN MEDICINE TODAY LIE IN THE FIELD OF GENERAL PRACTICE

President Glen Frank in the Chicago Daily News, May 8, 1929, had an article on the Perils of Specialization. We quote:

THE FAMILY DOCTOR

"In all fields of modern enterprise we are facing the problem of the perils of specialization. The highest achievements of modern life are due to the fact that modern science has given us the specialist.

"But humanity has a habit of swinging from extreme to extreme.

"The old generalist sinned on the side of superficiality, but the modern specialist is sinning on the side of fractionalism.

"Nowhere is this more evident than in the field of medicine.

"When all is said and done the doctor must treat patients, not parts of patients.

"A patient may be examined by ten specialists and the results of their examinations will have a depth and breadth and accuracy that would be impossible apart from intensive specialization, but the patient may die unless the separate findings of the separate specialists are seen in their relation and result in sound conclusions respecting treatment of the patient not as an aggregation of organs but as an organism.

"I should like to say to young men who, reading this column, may be thinking of medicine as a career that humanity needs great general practitioners, great family doctors.

"I am convinced that the greatest opportunities in medicine today lie in the field of general practice.

"The general practitioner has a chance to study disease that rarely comes to the specialist.

"He can know whole families and know the

tangled forces of heredity that focus in the individual.

"He can know the individual over a long stretch of years, not in brief hours of examination.

"He can know the long-time results of treatment.

"We need the specialized practitioner, we need the consultant, but we need also the general practitioner.

"It is very important that young men considering medicine as a career should realize that to be a general practitioner does not necessarily mean being shunted off into the meager life of a rural pill peddler, but that we are at a point in the evolution of medicine when the situation cries aloud for a new race of highly trained general practitioners."

ROYAL RUSSIAN EXPLAINS HOW KOLLONTAI MATERNALISMS TEACH RUSSIAN CHILDREN NEEDS AND USES OF ABORTION RATHER THAN HEALTHFUL SPORT

GRAND DUKE ALEXANDER SAYS SOVIET DESTRUCTION OF HOME WILL PROVE BOOMERANG*

Grand Duke Alexander of Russia, the present tenth in succession to the lost thrones of the Romanoffs and the brother-in-law of the late and last of the czars makes pertinent comment upon Russia's moral debacle under the soviet. Much of this is applicable to American adaptations of soviet so-called reforms, especially state medicine.

Grand Duke Alexander says he would not have the old Russia back, but that the new, enmeshed in the moral obliquity of sovietism and communism is unspeakable. *And he condemns especially those teachings of Mme. Kollontai upon which the doctrines and dogmas of the Children's Bureau of the United States Department of Labor base so many of their tenets.* The grand duke really ought to know what he is talking about. He ought to know his Russia. In an interview with a representative of

*This is an exclusive interview with Grand Duke Alexander of Russia, written especially for the ILLINOIS MEDICAL JOURNAL. The Duke's perspective on Madam Kollontai is both interesting and illuminating and supports the Editor's consistent attitude in opposition to the sovietization of our homes and youth, American medicine and the sick and ailing of the nation.

THE ILLINOIS MEDICAL JOURNAL he spoke at length. Excerpts from this speak for themselves.

"Russia is in a terrible state. Russia with all her wealth and her great, if sometimes misguided, past will inevitably regain her moral and ethical balance. But this equilibrium cannot be regained until the sanctity of the home, the family, and the church and the honor of women and children has become as it should be in all nations, a matter of reverence. Bolshevism is terror, and destruction, and the worst sin of bolshevism is the havoc it has wreaked upon the children.

"Poor Russia's 'wild children' are a living scandal to the civilized world. Where there is a gospel of so-called 'free love' maintained there is moral and national slavery. What have we in Russia? Little girls, some as young as eight or ten years of age, openly having connections with men, and knowing even at that age that the right of abortion is as free and easy as the right to a drink of water. Disease and sex animalism have made and are making of these pitiful 'war children' a race of monsters, already so far steeped in the iniquitousness of their troubles that to those of us who know what childhood should be death seems the only release for their troubles.

"Now a government that permits, nay encourages and fosters, such conditions among its children, let alone its citizenry at large, is not a government that can stand. It must fall. Poor Russia is working its way out. But the way is very dark and dreary and very long. No nation has ever thrived, no nation has ever survived, even, when the sanctity of the family was trodden under foot to make chaos.

"What I cannot understand is why the United States, the wealthiest and most advanced in prosperity of all the nations, should recognize the soviet, should give it any countenance, either by imitative policies or by cognizance. That way disaster lies.

"I would not have the old Russia back. Not for all the wealth that once was mine, nor the power, nor the potentialities. Were the White Russians to come into their own again, were all that power to be given into my hands absolutely I would make of my Russia a democracy, but a democracy founded on the gospels of peace and love and honor. That way freedom lies. Not

in the slavery of the senses, nor the exploitation of lusts, nor the destruction of religion, nor the deification of communism.

"No individual can be thoroughly communistic. Communism is a vast and leprous sore. You in America do not realize how the red wall of communism runs throughout the old, old countries. Communism eats into the soul of Europe like a smouldering fire; it has spread to Asia, and even to darkest Africa. What communism has done to Russia it stands ready to do to the world. Why, then, will a nation like the United States, a leading nation, a nation such as Russia might have become had she not hearkened to the cry of the false gods, why will a nation like the United States not only tolerate sovietism but recognize it, and to some degree ape it? How many of you here in the United States know the truth, or even the half truth about red Russia. About the "reforms"? Such "reforms" as teach little girls, who should be as yet learning their prayers, playing with their dolls, that the sex act and its consequences need not worry them, that their bodies can court rather than evade defilement?

"Even red Russia is waking up to the fallacy of such degradation. Here and there are murmurs, half-whispers, a turning like the wind in the wheat, vanished before it is grasped; missed before it is heard. But oh, the long, long way that must be trod before the sanctity of the family is restored in Russia.

"One of the weekly magazines has been carrying a series of articles about Russia and the soviet that in the main are accurate. One such article cites the incident of some children who had been sent by communists in Russia to visit communists in Germany. The poor little ones on their return to Russia, hearkening back to the memories of the German families where they had been entertained, wept bitterly and sobbed, 'Oh, we didn't know that living could be made so nice.'

"That in itself contains a volume. Mme. Kolontai? She is all bolshevist; so are her teachings. I have tried to tell you what about bolshevism."

The statements of this exiled, refugee Romanoff should certainly bear weight. Here he is a cultured gentleman, with first-hand knowledge of what he speaks, a man who was a great patron

in its hey-day of the extravagant imperial Russian ballet, famed for its expense, a man who is living the work-a-day life and having his children do so without fuss or pother, and he condemns from the core the Kollontai teachings. One would expect one Russian to understand another. He has nothing to lose and even less to gain from any stand that he might or might not take for or against Mme. Kollontai, whose preachings have served as a sermon on the mount for many of the "reform advocates" of American systems of living, especially the Children's Bureau and the protagonists of the Sheppard-Towner and similar maternity legislation. There is always a kink in these great economic panaceas. Kollontai not only favors the teaching of the moot question of birth control, but goes a step further, and, as the grand duke connotes, provides abortion parlors, where it is no more disgrace in Russia to go as a patron than it is for an American woman to patronize a beauty shop. To inflict such decadent and debauching policies on the American people under the masque of "First Aid to Mothers and Children" as the Kollontai disciples of the United States have attempted and are attempting to do, would appear to be adding at least ten last straws to break the camel's back. For the gist of the whole system would be not only to corrupt the nation and destroy the democracy by the simple method of corrupting and destroying womanhood and the home, but to make the ghastly victims pay for the devastation with a ruthlessness far more sinister than the theft of the copers from a dead man's eyes.

The grand duke knows what he is talking about, it would seem, by all the laws of inference, understanding and logic. Of how many spouting socialistic soap box orators can this be said? Those who feel like paying taxes to spread Kollontai-ism in this comparatively clean-minded country are asked to read what the grand duke has to say before putting their hands not only into their own pockets, but into the purses of their neighbors.

Note and comment:

The grand duke is the husband of the Princess Xenia, the oldest sister of the late Nicholas, and the one who was always the favorite of the Rasputin-wrecked ruler. An humanitarian, a tried and proven officer in the Russian navy; and dur-

ing the World War, the head of the Imperial Russian Air Forces, his royal highness is both a man of experience and of once opulent habit and of sound common sense. He has six children and some seven or eight grand-children. Three of the sons are in this country. One sells bonds in New York; another is with an aviation manufacturer, and the third is a salesman in a Chicago retail shop. This young chap, the Prince Rostilav, second cousin of the Prince of Wales, is married to the Princess Aleka Galitzine, who likewise labors in a department store. Rostilav began selling neckties, but he has "worked up." Preferring honest labor to sympathetic and aristocratic charity, these heirs of the wealthiest throne in the world give daily a sincere demonstration of the true locale of honor. "Do well your part; there all the honor lies."

The grand duke himself has set about earning his living as a lecturer. In his sixty-four years of life the grand duke has traveled much and far. The Russian revolution left him penniless but philosophical. He made the best of things.

SOVIET RUSSIA HOLDS THAT DOCTORS ARE LESS SKILLED THAN INDUS- TRIAL WORKERS AND SHOULD LIVE AND BE PAID ON A MEANER SCALE

A sidelight on medicine as it is practiced under a state of socialism in soviet Russia will be of interest both to those in sympathy with socialist trends in medicine and to those who feel that the time has not yet come to put the science of the healing arts on the same level with brick-laying or bread-making.

Upon this subject the Canadian Medical Association Journal for September, 1929, prints this statement from a special correspondent:

MEDICINE IN SOVIET RUSSIA

Dr. Ralph A. Reynolds, retired president of the American Medical Association of Vienna, on his return from Soviet Russia told the New York *Herald Tribune* that he had visited a large number of clinics in Moscow and Leningrad. Under the socialist system every worker is insured, and when he gets ill the insurance not only pays the full wage during the time of disablement but also the hospital expense.

An institution which has no parallel abroad is the night sanatorium for workers who are in a poor physical condition. These workers, instead of going home when their working hours are over, pass the remainder of the day and the night in the sanatorium. They

get a shower and are put to bed for an hour, then do physical culture exercises after which they may occupy themselves as they like until bedtime, which is fixed at an early hour. They are also served a special diet. Only on Sundays are they allowed to leave for their homes. Such a "cure" generally last two months. In Moscow there are twenty-four night sanatoria, ten of which are for tuberculosis suspects.

There are 156 day nurseries in Moscow alone, each of them near a big factory. The average attendance is 125 children. To instill the spirit of sovietism at an early age pictures of Lenin as a babe decorate the walls.

The medical service is public. Everybody is entitled to free treatment. About 140 physicians are on duty at a Moscow clinic, and from thirty to forty doctors are detailed to at-home service during night hours. As private practice is abolished anyone taken ill or meeting with an accident during the night telephones to the nearest clinic and is taken care of.

Village clinics have been distributed so that each clinic serves a population of 15,000. In the more sparsely populated districts this means that many people are more than fifty miles from a doctor. It is difficult to win the uncultured peasant class to modern ideas of hygiene; conditions in the open country are still appalling.

The Russian Government spends money lavishly on modern instruments and other equipment. Funds are always available for research work and propaganda, but the salaries of doctors are small and cannot compare with what a professor or a practitioner can earn in other countries. Physicians of high standing get about a hundred dollars a month and have to be contented with a miserable home of one or three rooms with a kitchen that is often shared by as many as six families. *The idea is that a doctor's home should not be so good as the class of homes given to Communist skilled workers who form the aristocratic class in the Soviet Republic.*

As the prospects for the medical students are totally different from what they once were, the class of people who go in for medical studies has undergone considerable change. Only those who support the Soviets enter the medical career. Women students, who, before the war, were 34 per cent are now 55 per cent of those studying medicine. Ninety-seven per cent of all medical students are educated by the government. In return they must go where the government sends them when they have completed their studies. For many this means exile in some out of the way place with great hardships. After having served three years on the post assigned to them they are free to make a choice of their own. They can shorten this three-year period if they accomplish something outstanding. Medical studies take five years in medical school and one year in hospital.

Russian doctors follow the progress of medicine in other countries closely and take over all improvements, but their own scientific research leaves much

to be desired. Dr. Reynolds had the impression that the Bolshevik system is becoming firmly entrenched, and that the rulers of Russia have the country well in hand.

GOVERNOR EMMERSON SAYS WELFARE COST IS HEAVY BURDEN

The executive points out peril to State if insanity increases.

Three and a half million dollars more of public tax money is spent each year in Illinois for charitable and penal institutional work than is devoted to education.

"More than \$43,500,000, or 34.49 per cent of the state's biennial income, exclusive of the road and bond funds, is now devoted to charitable and penal institutions," Governor Emmerson said. "Slightly less than \$40,000,000 is devoted to education. Only 16 per cent is devoted to the general government."

WANTED: BACK NUMBERS OF THE ILLINOIS MEDICAL JOURNAL

The Bureau of Science Library, Department of Agriculture and Natural Resources, Manila, Philippine Islands, desire back numbers of the JOURNAL as follows:

Vol. 29—February and March issues, 1916.

Vol. 30—August and December issues, 1916.

Kindly send numbers asked for to the ILLINOIS MEDICAL JOURNAL, 185 N. Wabash Ave., Chicago.

The managing editor would like a copy of Vol. 26, July, 1914. Please state price.

ILLINOIS ANTI-VIVISECTION SOCIETY IS AGAIN BUSY

The Illinois Anti-vivisection Society has been quite active during the past six months. They have sent out letters stating that a "dog bill" will be introduced at the next session of the legislature. They are now conducting a membership campaign. I enclose a copy of the latest letter they have sent out.

Mr. C. E. Richard, their executive manager, is now on full time service. He is a promoter and an advertiser, and we have information showing that George Arliss, the English actor, is paying his salary. He was the chief instigator of the trouble caused us last year.

This letter is simply to inform you what the Anti-vivisectionists are doing.

The following letter has been sent out by the Illinois Anti-vivisection Society:

THE ILLINOIS ANTI-VIVISECTION SOCIETY

Dear Member:

Dr. Samuel McC. Hamill, of Philadelphia, whose record in human vivisection has been condemned in a resolution adopted by your society and sent to President Hoover and Secretary of the Interior Wilbur, has been appointed chairman of the medical section of the White House Conference on Child Health and Protection. Dr. Hamill by his own admission stands convicted of having conducted tuberculin experiments upon inmates of St. Vincent's Home in Philadelphia, an Institution for foundlings, orphans and destitute children.

Dr. Hamill's record plainly unfits him to be entrusted with the welfare of children. In adopting a resolution against this appointment, your society feels that it has not done enough. We now appeal to you to help us finish the job and force the withdrawal of the appointment of this man.

We ask you to write a letter to President Hoover, White House, Washington, and to Dr. Ray Lyman Wilbur, secretary of the interior, voicing your protest against the appointment of Dr. Hamill to this important post. Tell the President and Secretary Wilbur that you do not believe that Mr. Hamill, in view of his record of cruelty and callousness toward the suffering of innocent little children, can safely be placed in a position where he will be able to dictate policies which may affect the welfare of all children.

At the same time, write a letter to the editor of your favorite newspaper and ask him to print the real facts regarding Dr. Hamill. Demand that the public press take official cognizance of the repeated charges—which have not been denied—of your society that Dr. Hamill is utterly unfit to hold any position affecting the welfare of children.

Please do not take the attitude that your letters will serve no useful purpose. Public officeholders are extremely sensitive to the opinion of their constituents and quick to respond to a flood of letters on any particular subject. We know that anti-vivisection societies all over the country are urging their members to write. If enough letters go in to the President and Secretary Wilbur, Dr. Hamill will be removed and another substituted.

This is a golden opportunity for us to demonstrate our strength. The cost is nothing—a few stamps and a few minutes' time. Shall we seize it and strike while the iron is hot? Do you want a man who has taken orphan children and used them as human test tubes to demonstrate some medical theory to fill a post in a conference whose sole purpose is to protect and benefit little children? Of course you don't. Then let's show the nation we are strong enough to prevent hu-

man vivisectionists from attaining positions of power. Do it now.

THE ILLINOIS ANTI-VIVISECTION SOCIETY.

By C. E. Richard,
Executive Manager.

Correspondence

AN APPRECIATION OF PATRIOTIC MEDICAL PROPAGANDA OVER RADIO

Silvis, Illinois,
December 24, 1929.

Mrs. C. W. Holmes, President,
The National Patriotic Association,
Care Radio Station WGN, Chicago.

My Dear Madam: May I be supplied with the literature announced for distribution in your appreciated broadcast of this afternoon?

For some years past the Illinois State Medical Society has given official recognition to what it considers a serious national menace of communistic propaganda and work in fields of public and private health activities. There are reasons for believing that communists have selected "health work" as a point of least resistance and is especially suited for attack. Official combative efforts may be followed through the files of the ILLINOIS MEDICAL JOURNAL of the past ten years.

One of the chiefest exceptions taken in Illinois was to the inclusion into official documents for distribution by the Children's Bureau of the Federal Department of Labor of the anti-family teachings of Mme. Kollontai. Teachings of this woman, a miscalled "patriot of the soviet," resulted in augmenting Russia's generation of "wild children" and analogous outrages, of which the consequent ruin became too patently apparent for the stomach of the official soviet. Yet America's imitation of these teachings, of which one expression was the Sheppard-Towner Act, continued to be exploited in this country until the present year to create appropriation expense for our own federal and state governments. The Illinois State Medical Society claims a share in the discontinuance of that expense and propaganda and wishes contact with organizations of congenial mind.

Your own broadcast was appreciated much.

Yours very truly,

W. D. CHAPMAN, M. D.

SOUTH CHICAGO DEPARTMENT
THE YOUNG MEN'S CHRISTIAN ASSO-
CIATION OF CHICAGO

3039 EAST 91ST STREET

December 4, 1929.

Educational Committee,
Illinois State Medical Society,
Miss Jean McArthur, Secretary,
Chicago.

My Dear Miss McArthur:

Doctor F. Balmer's health lecture under the auspices of the Educational Committee given in our lobby Tuesday evening, December 3, was exceptional and was attended by over ninety men, which is by far the largest group we have had yet. I am sure that if the talks you have secured for us in the future continue on the high caliber they have started out, our lobby will be overflowing before the series is over.

I am writing to tell you again that we appreciate very much this service that you are giving. I assure you that if ever we have the opportunity to boost the Illinois State Medical Society, we shall surely do so.

Cordially yours,

K. R. MILLER,
Associate Physical Director.

"PHYSICAL IMMORTALITY"

Sixteen years ago Dr. Alexis Carrel of the Rockefeller Institute for Medical Research took some cells from the heart of a chick embryo and began growing the isolated cells in his laboratory. They are still growing. Remarked Dr. Carrel: "The cell is immortal. It is merely the fluid in which it floats which degenerates. Renew this fluid at intervals, give the cell something upon which to feed, and so far as we now know, the pulsation of life may go on forever.

"Quickly, involuntarily, the thought comes: Why not with man? Why not purge the body of the worn-out fluids, develop a similar technique for renewing them—and so win immortality?

"Although the body is composed of elements that are potentially immortal, it is and always will be subject to senility and death. Immortality is incompatible with organization. But organization is necessary for the development of a highly differential nervous system and for the appearance of mental processes.

"Death is the price we have to pay for possession of our brains. The price is not excessive because the mysterious energy which is created by the brain cells, or expresses itself through them, is after all, the greatest marvel of the universe."—*Time*.

THE DIFFERENCES IN THE SEXES

The male generally has a stronger fiber, a less complex nervous system, and is generally healthier and coarser. He has a differently organized endocrine system, dominated by a different gonad, a different sympathetic system and a completely different nervous organization. Ordinarily his thyroid is of little consequence, while hers exerts a dominating influence over her whole life. He breathes differently and does not inhale in the same manner as does the female.

In conversation with an old doctor of large experience and much wisdom, the "yes" and "no" of smoking was the subject of discussion and his reaction was summed up in the following expression: "Yes, doctor, smoking hurts boys, but it raises real hell with girls."

There's biologic difference

Of form and shape and grace

'Tween sister's pretty clinging self

And brother's freckled face;

Their eating pie, or dreaming dreams,

Or even throwing stones;

There's difference in their protoplasm,

Their flesh, their nerves, their bones,

There's difference in their destiny

That is not hard to trace.

Dear Lord! Guard her, we humbly pray,

The mother of the race.

—*Compend of Medicine & Surgery*.

HYPOGLYCEMIA AND CONVULSIONS OF EARLY LIFE

From the cases cited by J. P. Crozer Griffith, Philadelphia (*Journal A. M. A.*, Nov. 16, 1929), it appears evident that in convulsions in children there is probably a frequent association between this disorder and the existence of a low blood sugar content. Whether, however, this is an etiologic relationship cannot be determined from these investigations: and they show, further, that a low blood sugar may exist without the occurrence of convulsions. On the other hand, in the first case, which was that most carefully studied, the remarkably rapid improvement on four different occasions, and the rapid response seen also in the second case, seem to justify the conclusion that, at least in some instances, the causative relationship of hypoglycemia to convulsions may be reasonably assumed.

BILATERAL SUBMUCOUS TRANSPLANTATION OF URETERS INTO LARGE INTESTINE BY TUBE TECHNIC

Robert C. Coffey, Portland, Ore. (*Journal A. M. A.*, Nov. 16, 1929), reports twenty cases in which he has performed this operation. He believes that this operation is now complete in principle and that it is applicable for all conditions in which it is necessary or advisable to dispense with the bladder as a reservoir for urine. It is justifiable in the following cases: 1. Exstrophy of the bladder. 2. Incurable cancer of the bladder with a life expectancy of more than six months in which morphine or a palliative cystostomy

is required. 3. Inoperable carcinoma of the base of the bladder or prostate in which large doses of radium are required in order to justify a hope of cure. 4. Certain cases of early removable carcinoma in which fulguration and similar agencies are now, used. 5. Incurable tuberculosis of the bladder in which one kidney has been removed and the other remains free from tuberculosis. 6. Tuberculosis of the prostate and seminal vesicles with or without perineal fistulas. 7. Incurable vesicovaginal fistulas. 8. Extensive, incurable, multiple perineal fistulas resulting from various causes. 9. Certain cases of painful, contracted bladder resulting from infection or ulceration. 10. Traumatic injuries which make the use of the bladder impracticable.

SPINAL ARTHRITIS

Louis W. Allard, Billings, Mont. (*Journal, A. M. A.*, Nov. 16, 1929), asserts that spinal arthritis in its various types is a common affliction of adults, especially the laborer. Extensive arthritis of the spine may be found without symptoms. Symptomatic arthritis in its incipience is without roentgen evidence. The discomforts and disabilities from spinal arthritis in industrial injuries are largely due to disturbance of the partially fused joints. Arthritis subjects are prone to disability of greater or less duration from injuries that would not affect a normal person. Disabilities complicated by arthritis occasion a longer convalescence than disabilities occurring in normal spines. The victim of arthritis is not a normal man. His efficiency is lowered. He is awkward, often distracted by his discomfort, easily fatigued, and an easy prey to minor accidents. He is an industrial hazard. Patients with recognized arthritis, properly advised, may be preserved for years of usefulness, with a big saving to industrial insurance. England is developing special clinics to take care of a rheumatic problem which complicates nearly 10 per cent of the clinical material. America with similar racial and social conditions may be laboring under a similar condition.

SICKNESS IN POVERTY

The impression prevails among practicing physicians that sickness is most common among those least able to afford it. Scientific and statistical confirmation of this belief is available in the latest report of the morbidity studies of the Public Health Service at Hagerstown, Md. Some 1,800 households visited in 1921 were classified according to economic status. The classification was checked by ten members of the research staff. Other members proceeded, during the following twenty-eight months to make an inventory of all sickness occurring in these households. The illness rates, corrected for age, during this period were as follows: well-to-do, 991 per thousand; moderate, 1,068; and poor, 1,113. Analysis by age groups shows that these differences tend to disappear in adolescence and old age, being most marked in middle age. In early infancy the order of morbidity is reversed, the

children of the wealthier parents suffering more sickness than those of the poor. A satisfactory explanation is not offered for this observation. From a study of the printed curves one gains the impression that it is a distinct advantage to be able to treat with proper respect and leisurely convalescence the acute disabilities of middle age, such as rheumatic, influenzal and respiratory infections. One aspect of the study gave quite definite results: "Those families which were definitely above the average of this community in economic condition had medical attention to a considerably greater extent than the remainder of the population." —*Jour. A. M. A.*, Oct. 19, 1929.

INFLUENCE OF INORGANIC ELEMENTS ON BLOOD REGENERATION IN NUTRITIONAL ANEMIA

The technic employed in the experiments on rats made by Victor C. Myers and Howard H. Beard, Cleveland (*Journal A. M. A.*, Oct. 19, 1929), was essentially that of Hart and Steenbock. Young rats were placed on a diet of whole milk for six weeks after weaning. When the erythrocyte count was about 3 to 4 million per cubic millimeter and the hemoglobin content 3 to 4 Gm. per hundred cubic centimeters, additions of various supplements were made daily to the milk. The experiments show that when growing rats have been rendered anemic by an exclusive milk diet, and 0.5 mg. of iron is given daily, traces of manganese, nickel, copper, germanium and arsenic all have a definite supplementing action on hemoglobin regeneration. All these elements, with the exception of nickel, have at some time in the past been recommended therapeutically in the treatment of anemia. The present observations are in large measure an experimental verification of older clinical observations.

DIET IN ETIOLOGY AND TREATMENT OF STERILITY

Donald Macomber, Boston (*Journal A. M. A.*, Oct. 19, 1929), asserts that there is a large body of evidence, both experimental and clinical, which shows that alterations in diet actually do produce sterility. An analysis of the diets eaten by 206 sterile women shows that they deviate in many important ways from normal. The average diet for the 206 women was found to be 71.8 Gm. of protein, 80.5 Gm. of fat and 227 Gm. of carbohydrate, with a total of 1,968.9 calories. A large number of these women show evidence of nutritional disturbances. By increasing the protein in the diet about 10 per cent, likewise the total calories, forty of the 206 women have become pregnant to date, even though practically all of them were seen for the first time within the last two years, and this result has occurred, at least in part, as the result of changes in diet and such other measures as the increasing of exercise, the taking of endocrine medication or the treatment of anemia. It seems to Macomber that regulating diet is a means of treating sterility which one cannot afford to neglect.

Original Articles

LOSING LIBERTY JUDICIALLY

A LAW BY WHICH AN UNSCHOOLED LEGISLATURE DICTATES TO THE SCIENCE OF MEDICINE, AND TAKES FROM A SCHOLAR HIS BRAINS CAN NOT BE IN CONSONANCE WITH LIBERTY

A REVIEW

CHARLES B. REED, M.D.

President of the Chicago Medical Society
CHICAGO

This is the title of a book of two hundred fifty pages recently published by Thomas James Norton of the Chicago Bar. The author cites a number of instances in which individual liberty has been lost judicially, but two cases—the regulation and physician's prescriptions and the Sheppard-Towner Act are so definitely medical problems at the present time that the writer has sought opportunity to quote the book quite freely for our professional enlightenment. Most of the review is couched in the author's own words, both for truth and clarity. At the outset Mr. Norton states that his discussion has to do solely with the Power of Government in the United States under the Constitution, and the Liberty of Man under the same Instrument.

"In dealing with prohibitory laws and decisions no element of *wet* or *dry* is permitted to enter, for with wet or dry, Government has no proper concern whatever. It did, however, have a duty to protect the weak or irresolute man and his family, and society from the manifest perils of the public saloon. *But* its Constitutional obligation was even more imperative to let the self reliant and capable man alone."

"The first question respecting prohibition laws is whether, in the performing of a duty to a class who need the protection of Government, the liberty of those who do not need that aid and whose conduct never contributed to the conditions which prohibition was instituted to cure, can be frittered away by judicial decisions or destroyed by legislative action."

After a scholarly historical survey, Mr. Norton inquires—"what was meant by Liberty in the Preamble?" (of the Constitution) and what is Liberty, and quotes John Stuart Mill as follows:

"The aim, therefore, of patriots was to set limits on the power which the ruler should be suffered to exercise over a community and *this*

limitation was what they meant by Liberty." Liberty, therefore, is *limitation* on Power. And so wherever a limitation set by the people for the restraint of Government is *removed*, their liberty is lost."

After amply confirming this position by historical examples, the author quotes Blackstone, whose work is the foundation of our laws, as follows:

"This natural Liberty consists properly in a power of acting as one thinks fit, without any constraints or control, unless by law of Nature; being a right inherent in us by birth and one of the gifts of God to man at his creation when he endowed him with the faculty of free will." Norton now says, "Political, therefore, or civic Liberty, which is that of a member of society, is no other than natural Liberty so far restrained by human laws (and no farther) as is necessary and expedient for the general advantage of the public."

And Lord Acton—"By Liberty, I mean the assurance that every man shall be protected in doing what he believes his duty against the influence of authority and majority, custom and opinion."

The State is competent to assign duties and draw the line between good and evil *only* in its immediate sphere. In ancient times the State absorbed authorities not its own, and intruded on the domain of personal freedom. In the Middle Ages it possessed too little authority and suffered others to intrude.

Modern states fall habitually into both excesses. The *most certain* test by which we judge whether a country is really free is the amount of security enjoyed by minorities.

Thus the Supreme Court of the United States checked the legislatures of several states when they undertook to tell students what they could study, and teachers what they could teach on the ground that such measures were *necessary* and *expedient* for the general advantage of the public.

In finding or claiming to find what is "necessary and expedient" the legislature cannot disregard common knowledge.

The police power over health, morals, safety, and general well-being of the people stops where constitutional limitations begin. Thus the police power could not authorize two-thirds property

owners to fix boundary lines for others whether to the damage of their property or not.

Nor was the State permitted by the Supreme Court to forbid attendance at any but public schools, in order to close schools in which religious precepts were taught.

After discussing the necessity for an independent and high minded judiciary and whether Government can be effectively *limited*, Norton places the burden of limitation in the Supreme Court and the Judiciary.

This view is also definitely put forward by Professor Dicey of Oxford who says: "The legal supremacy of the Constitution is essential to the existence of the State. The glory of the founders of the United States is to have devised or adopted arrangements under which the Constitution became in reality as well as name, the supreme law of the land.

This end they attained by adherence to a very obvious principle and by invention of appropriate machinery, for carrying this principle into effect."

The legal duty, therefore, of every judge is clear. He is bound to treat as *void* every legislative act, whether proceeding from Congress or the State legislatures which is inconsistent with the Constitution. Now the question arises whether the Courts have stood firmly for the Liberty of man against the pressure of legislatures, "blocs" and public sentiment.

The case of *Mugler versus Kansas* in 1883, and affirmed by the U. S. Supreme Court, upheld an absolute prohibitory law of that State.

By an absolute prohibitory law is meant one which takes no account of the rights and liberties of those persons who are not constitutionally subject to the power of the State, those in other words who are competent to use as a beverage what has been recognized, at least since Jesus made wine, as an unobjectionable drink if taken in moderation; and who have, therefore, the indubitable right to purchase, carry and consume the same.

But the police power, which has to do with the health, safety, morals and general well-being of the people, as well as the detection and punishment of crime, has in later prohibitory laws put the inebriate and the sober in one classification and treated them accordingly.

Of course the strong and competent must

yield convenience (not right) when reasonably necessary for the help of the weak. But regulation for the benefit of one cannot work deprivation of right or property for another. While some ordering is proper, nevertheless "such a Constitution would afford no warrant for such an exercise of legislative power, as under the pretense and color of *regulation*, should subvert or restrain the right itself." (Chief Justice Shaw of Massachusetts.)

Norton has thus defined and supported the definition of Liberty and the inalienable sources thereof. He has outlined the duties of State, in reference to the preservation of such liberties, and he has of necessity allocated to the Judges of the State and United States Courts the task of upholding these liberties against all encroachments and then he quite logically inquires whether the judges have fulfilled this obligation.

He asks whether the Constitutional guarantees of the Liberty of man have been fairly interpreted, and justly, and with even hand fully and fearlessly enforced by the Courts against the power of the Government.

The answer to this question is *NO*.

"In November, 1926, the Supreme Court of the United States upheld the Act of Congress of November 23, 1921, forbidding physicians to prescribe to one person within ten days more than one quart of vinous liquor, or any vinous or spirituous liquors containing separately or in the aggregate more than one-half pint of alcohol."

The act forbids also any physician to issue more than one hundred prescriptions within ninety days unless he has made it clear to a Commission that for some extraordinary reason a larger amount is necessary.

Four of the nine justices dissented on the ground that the eighteenth amendment gave the Nation a police power over liquors for *beverages purposes only*.

The first section of the Amendment reads "after one year from the ratification of this article the manufacture, sale and transportation of intoxicating liquors . . . for beverage purposes is hereby prohibited." The only subject presented to the States for ratification by their legislatures was liquors for beverage purposes. The Court held that the Amendment did not displace or cut down consistent State laws, but on the

contrary, removed from the path of the states obstacles which prevented more stringent legislation; all the police power that the states had before the Amendment, they retained, both as to liquors for beverages and *liquors for medicine*.

With the propensity to meddle in and to assume jurisdiction in the affairs of the states which has more and more characterized Congress in recent times, it proceeded in less than two years after the adoption of the Amendment to step into the police field of the states and snatch from them their inherent power over liquors for medicinal purposes.

The Committee of the House of Representatives gave as reasons: "Unless some limit is placed upon the amount of such liquors that may be prescribed, a number of physicians who do not have the high ethical standards of the large majority will abuse the privilege. Evidence was presented to the Committee of physicians who issued hundreds of prescriptions within a few days when the total of other prescriptions was a negligible number."

Did the listening congressmen send the complainants to the grand jury, or to the prosecuting attorney of their own state whereas the report shows "most states have more stringent provisions than the one in Section 2 of the Amendment whereby the offending physicians could be punished by proper authority. They did not. Why did they go to Washington at all rather than to the state authorities. If the states lacked sufficient law for regulating the conduct of physicians why not work for such a law in the State itself? Under no circumstances whatever, should Congress have the presumption to invade the states in regard to liquors for *medicinal purposes*." To the reviewer it is suggested that if a mayor is given specific authority to regulate street-car traffic, how can that give him the power either to stop the operation of the lines altogether because the feeble minded may be run over, or to buy machinery, erect power houses, or form combinations with other transportation lines, and otherwise spend the stockholders' money without their consent. It is not admitted that a government has such power as Congress exercised here to dictate to competent and honorable physicians. It can deal with physicians only as it deals with other men—when he has violated the law.

It is against the policy of law to enjoin the Commission of Crime. The presumption is that a man will not commit crime, and he is therefore not disturbed until he has violated law. This principle is the basis of the liberty of the press and of speech.

The censorship of former times *before* publication in order to forestall libel or other wrong was discarded over three hundred years ago. The law takes a man not *before* he has committed his violation, but after.

The Act of Congress is, therefore, at war with the best legal thought and practice. Yet in a footnote the Supreme Court cites a list of states statutes regulating prescriptions by physicians.

A law by which an unschooled legislature dictates to the science of medicine, and takes from a scholar his brains cannot be in consonance with Liberty.

The House Committee in reporting the bill made it plain that the evil to be corrected was small. It said "a *number* of physicians who do not have the high ethical standards of a *large majority* will abuse the privilege". The large majority are above criticism. But even if this large majority was prescribing liquor wrongfully the question would still remain whether Congress could take the correction of that evil out of the hands of the States by any grant of power in the Eighteenth Amendment.

A careful examination of the powers conferred upon Congress by Section 8, Article I of the Constitution, and the careful statement in Section 9 of the powers *denied* to it, takes from this procedure its legality. Over and above all is the Tenth Amendment, which reads:

"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are *reserved* to the States respectively, or to the people."

Therefore, because some states may not look carefully after the professional conduct of physicians it does not mean that the power to supervise has been lost to those or other states and that the Nation may, therefore, pick it up and use it.

The Tenth Amendment recognizes latent or unused powers in the people, and in the states, and it warns the Nation to let them alone. The Nation can exert no power not conferred upon

it by the people in their Constitution. By the Eighteenth Amendment the people conferred upon Congress "concurrent power" with the States to control "the manufacture, sale or transportation of intoxicating liquors for *beverage purposes*." Just as explicitly by that language the control over liquors for medicinal purposes was excluded. When the Eighteenth Amendment authorized the Legislative Department (Congress) to deal with *beverages*, that was the end of its agency on the liquor subject.

In applying the Constitution to practical affairs it is more important that limitations upon Government be liberally construed in order to give them effect than it is that grants of power to Congress be liberally construed. The Tenth Amendment is a *grant of power* to the Nation the like of which it never had before.

As it was in derogation of the American Constitutional principle, it should have been very strictly construed in the interest of the State at home. When these two amendments came in conflict in the case of physicians all doubts should have been resolved in favor of the Tenth and the governmental integrity of the State. The unqualified language of the Tenth Amendment forbids any construction of any part of the Constitution in derogation of the sovereignty of the State where there is no plain grant in derogation of it. The reservation to the States of full power over medicine was just as distinct as the grant to the Nation of partial power over beverages.

To what purpose did the Eighteenth Amendment limit action by Congress to *beverages* if that limit might be passed at pleasure by Congress and the Control of Medicines assumed.

The Supreme Court thought the Act of Congress relating to physicians within the States was *appropriate legislation*—under Section 2 of the amendment—which says, "Congress and the several states have concurrent power to enforce this article by appropriate legislation". Finding the legislation *appropriate* the Supreme Court said "When the United States exerts any of the powers *conferred* upon it by the Constitution no valid objection can be based upon the fact that such exercise may be attended by some or all of the incidents which attend the exercise by a State of its police power." The statement assumed that "the United States had received

that power—which is the point at issue and the one on which four (4) justices dissented."

Secondly, it assumed that a State may, by its police power, constitutionally substitute its crude judgment for the scientific opinion of a physician. Can it? The State may punish a physician for dealing in any way in liquors as beverages, but can it control his judgment as a physician? If it *can* what does his *Liberty* mean?

An Act to compel all physicians to be good—as legislatively understood—is cut from the same piece of power as the Conventicle Acts "whereby the Tudors and Stuarts required people to worship in the way which legislators had selected as best for them and the country."

In section 2 of the Eighteenth Amendment we have the only example in which the Nation and the States have concurrent power of enforcement. All other amendments requiring "appropriate legislation" are enforceable by the Nation alone. But here the States did not surrender their police power to the Nation. Power was given to the Nation which it did not before possess, but the States did not abandon theirs. They retained the jurisdiction to legislate on the subject of liquor for both beverage and medicinal purposes which they had inherently possessed. The amendment authorized Congress to *cooperate* with them in legislation for the control of beverages only.

The Committee reporting this bill said that "this legislation will work no hardship upon the profession of medicine because most of the states have more stringent provisions." Neither would the tax on tea have been a hardship on the American colonists but they resented the encroachment like true born fighting men and flew to arms in defense of the principles of the British Constitution, on which our present liberty is based.

Convenience is not the measure of constitutionality. What Congress should have considered was not the comfort or discomfort of the physicians but the Tenth Amendment which was intended to preserve the States forever from national encroachment and the first section of the Eighteenth Amendment by which their police powers over liquors both for beverage and medicinal purposes was explicitly left to them.

The least understandable aspect of this and similar legislation is that members of Congress

should be so ready and active to strip their respective states of their constitutional prerogatives, for as a matter of fact nation-wide prohibition was coming as fast as the people were ready for it, and in something like the right way. The Act of Congress, respecting physicians is itself an illustration of the growing federal tendency to reach out for power.

"The sole end for which mankind are warranted, individually or collectively," wrote John Stuart Mill, "in interfering with the liberty of action of any of their number is self protection." The only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral is not sufficient warrant. He cannot rightfully be compelled to do or forbear because it will make him happier, because in the opinion of others, to do so would be wise or even right.

"These are good reasons for remonstrating with him, or reasoning with him, persuading or entreating, but not in compelling him or visiting him with any evil in case he does otherwise. To justify that, the conduct from which it is desired to deter him must be calculated to produce evil to someone else."

Judge Taney's observation that a state has the power of regulating and restraining (the liquor) traffic is conceded. It has always been conceded. The question under consideration here is the constitutional power to *stop* it absolutely as to capable and temperate men.

So far has Congress gone in violating the Tenth Amendment. The next step as suggested by Mr. Norton may well extend to other forms of liquid and food. If it is criminal to possess liquor or to transport it in a valise, then in further protection of the "peace and security of society" as the Supreme Court says—whenever a man succeeds in eluding the vigilance of the enforcement snoopers and takes a drink it must be forcibly withdrawn from him by a stomach pump "for the protection of the community."

To those who wish further enlightenment on losing liberty judicially as represented by the oleomargarine law of Pennsylvania, by the legal confiscation of other people's money as in the Depositor's Guaranty Fund of Oklahoma, in the Harrison Narcotic Law, and the Public Seque-

stration of Private Property by the Erie Railroad in New Jersey, the unwarranted expansion of the White Slave Act to cover other forms of misdemeanors and various similar legislative encroachments on the Courts the reader is referred to Mr. Norton's interesting book.

The next case that most nearly concerns the medical profession is the Sheppard-Towner Law. "In 1923," says Mr. Norton, "the commonwealth of Massachusetts and an individual living in the District of Columbia endeavored to have the Supreme Court of the United States pronounce upon the Constitutional power of Congress to pass (Nov. 23, 1921) an act for the promotion of the Welfare and Hygiene of Maternity and Infancy and for other purposes, known while pending as the Sheppard-Towner Bill."

They did not succeed and upon the expiration of the five year period the law was re-enacted. As the matter stands in the Courts Congress is enabled now to spend the public funds for any excursion into Utopia which it may care to take. The Act appropriated \$480,000 for the first year. For each of the five years \$5,000 was appropriated to each of the forty-eight states to cover the donation of a like appropriation of its own.

A Board of Maternity and Infancy was set up and the Children's Bureau charged with the administration of the Act.

The legislature of each State was required to make formal acceptance of the donation, and to create a state agency of tax consumers.

Massachusetts made several contentions against the constitutionality of the legislation, among them that it assumes powers not granted to Congress. This point should have been decided in one of the two cases disposed of together. Both the Massachusetts case and Mrs. Frothingham's (District of Columbia) argues the point that Congress was without power to appropriate money for such purposes.

That Congress can use money only in exerting the several powers specifically granted by the Constitution with those implied powers which clearly attend a granted power as the power to establish a national bank resulted from the money and taxing clauses.

There was as solid a question as has ever been resolved by John Marshall. But it was not de-

cided. The almost unanimous opinion is that Congress is lacking in the power to raise and spend money except in carrying out the grants conferred upon it in respect to national and international affairs as counsel for Mrs. Frothingham contended. The Supreme Court found it has no jurisdiction without discussing here the status in Court of the Commonwealth of Massachusetts, and its right to protect its citizens as taxpayers against an unconstitutional appropriation of funds even where the legislature had not accepted the sop offered by Congress. It is clear that Mrs. Frothingham, as a taxpayer, took a step which the Supreme Court has upheld in many cases arising in the states.

A taxpayer can enjoin in his own behalf and in the interest of all others similarly situated the execution of an illegal scheme of taxation and expenditure. Upon the showing of unconstitutionality the officers whose duty it is can be restrained from spending the funds. Mrs. Frothingham brought suit to prevent the Secretary of the Treasury from paying out funds according to the provisions of the Maternity Act.

Though admitting the general law in such cases to be as stated, the Supreme Court said the right of a taxpayer thus to "enjoin the execution of a federal appropriation act on the ground that it is invalid and will result in taxation for illegal purposes, has never been passed upon by this Court."

"The relation of a taxpayer of the United States to the Federal Government is not the same as the state" says the Court. "His interest in the moneys of the treasury—partly realized from taxation and partly from other sources—is shared with millions of others; is *comparatively minute and indeterminable*; and the effect upon future taxation, of any payment out of funds, so remote, fluctuating and uncertain that no basis is afforded for an appeal to the preventive powers of a Court of Equity."

If a taxpayer in New York with a population in 1920 of over ten millions, can in an injunction suit stay the operation of an act of the legislature, violative of the Constitution of the State or United States (and it has long been settled that he can), why should a taxpayer of the Nation with a population of one hundred five million be denied injunction relief from the application of an invalid act of Congress.

The interest of the taxpayer in New York is "comparatively minute and indeterminable" for one person out of ten million is very small indeed, but constitutionally he is or should be as large as the whole mass. Just where does the distinction operate between one in ten million and one in one hundred five million?

It is erroneous to state that "the relation of the taxpayer of the United States to his Federal Government is very different from that of a taxpayer to his City or State in all of which relations the Courts of Equity have in countless cases given him relief against illegal schemes of spending.

Nor is it important that the taxpayer's state might never accept the offer of Congress—he has the right to object to the use of national funds in *every state* where spent under an unconstitutional law.

Passing from the "comparatively minute and indeterminable" interest of the taxpayer among one hundred five million (which it seems would not be so among ten million) the Court expressed apprehension of confusion. "If one taxpayer may champion and litigate such a cause then every other taxpayer may do the same not only in respect to the Statute under review but also in respect of every other appropriation act and statute whose administration requires outlay of public money and whose validity may be questioned."

First, even if it were so, there would be no ground for denying relief if the law were unconstitutional. Second, experience in the States shows that the fear is not warranted. Third, no Court will entertain a suit to test the validity of a statute when another Court has already taken "jurisdiction."

The result of the decision is that since a state cannot maintain a suit to enjoin a Federal officer from spending money under an unconstitutional act of Congress, and since the interest of the taxpayer is so microscopic as to leave him remediless, the Congress is practically licensed to do as it pleases.

"The conclusion drawn from this study," says Mr. Norton, "is that the Judicial Department of our Government is as the writers of the Constitution believed, indispensable to Liberty, and in need always of the support of the people. Without that support it will eventually be weak-

ened if not broken, for in our own supposedly enlightened time it has been most viciously attacked with an incredible volume of popular applause by both the Executive Department and the Legislature."

Only a people indoctrinated by the schools with our philosophy of government can be capable of holding the President and Congress where they belong through force of an enlightened and positive opinion. The Judicial Department has for a century and a quarter met the purpose for which it was established and generally kept the Government in its constitutional course. Thereby the American people were enabled to reach their eminence among the Nations. Any curtailment of its prerogative or diminution of its conferred powers would be a move toward suicide, the end of the Republic which Macauley prophesied, and the only one that Abraham Lincoln feared.

RECENT ADVANCES AND THE PRESENT STATUS OF TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM*

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The constant change in medical advancement has neglected until the present generation the neurosyphilitic patient as an individual who demands special methods of treatment. Old specifics when administered more or less periodically over a period of years kept the syphilitic in fair health. Until the last ten years the paretic was doomed, the tabetic had almost as good a chance for relief as at present, and the patient with optic atrophy almost invariably became blind. The outlook for these unfortunates is now more hopeful with our present day methods.

Since Schaudin discovered the spirochete of syphilis (1903) and Wassermann designed his test (1906) investigators have made strenuous efforts to find chemicals that will sterilize the body of these organisms without detriment to the host. The protoplasm of the spirochete is too similar to the human tissues to give an opportunity for a single sterilizing dose of any of

our drugs as Ehrlich hoped his salvarsan (1909) would afford. Progress is still being made each year, but few of the advances are epoch making.

Morphology. It is worth knowing, but affords faint satisfaction to understand the lack of success in certain patients. Our failure is apparently due to anatomical causes. Since syphilis is a disease of connective tissue, or at least prefers lodgement in tissue of mesenchymal origin, it is important to take up some morphological considerations concerning the central nervous system. About the third week of embryological life the neural tube closes over by an up-growth of mesoblast in the medulary fold. Mesenchymal cells attach themselves to the neural tube forming a primary sheath for it. The dorsal branches of the segmental arteries and veins vascularize it. When the vessels perforate the sheath and nervous tissue, mesenchymal tissue is thus added to an epiblastic structure. By the middle of the second fetal month this sheath has been cleft into the meninges. With these facts before us we are in position where we can better understand the clinical and pathological divisions of neurosyphilis.

Pathology. The first and most common type is the meningo-vascular syphilitis. This is in the strictest sense not a disease of the nervous system but a disease of the blood vessels and their accompanying mesenchymal tissues. In more common parlance the lesions are in vascular and perivascular regions of the meninges and the central nervous system and not directly in the neural parenchyma at all. They are in the tissues carried into the nervous system by the mesenchymal invasion just described. Such lesions are more accessible to the effects of drugs than when they are located in the nervous elements and beyond connective tissue barriers.

The second or parenchymatous type is commonly designated as tabes dorsalis and paresis. They have passed through the meningo-vascular stage and the spirochetes, their toxins, or the indirect effects of both, have caused actual degeneration or destruction of the nerve elements.

Tabes dorsalis is usually considered to be a primary degeneration of the posterior columns of the spinal cord induced by lesions at the point of entrance of the posterior root fibers.¹ Study of the lesions of tabes places the primary inflammatory lesions in the posterior roots. There

*Read before the Williamson County Medical Society, Herrin, Ill., Sept. 12, 1928.

are also degenerative changes in the peripheral ends of the sensory fibers and also in the collateral endogenous tracts in the spinal cord. It is to be noted that in tabes the most severe lesions are in the sensory nerves. The retina and optic nerves are common sites of involvement. Not all tabetics will suffer from optic neuritis or atrophy, nor will all meningo-vascular or paretic patients be free from its more or less relentless progress once it starts.

Paresis is essentially the picture of cortical degeneration with increased vascularization of the cerebrum. Pachymeningitis or leptomeningitis with adhesive processes are commonly found postmortem. The cortex is thinner than normal and the various cell layers are much thinned out or entirely absent. Association fibre tracts suffer indirectly from disuse or directly from the invasion of spirochete and the blighting effect of defective circulation. The spirochetes may interfere with cerebral function by endarteritic, perivascular lesions or by direct invasion of the parenchyma. The connective tissue along the blood vessels shows more reactive tendency than the neuroglial tissue which suggests the nerve elements. Thus one can account for the relatively little reaction of defence to the spirochete in contact with the ganglionic cells or their processes in the brain. The possibilities of spontaneous remissions or the effects of treatment depend on how far advanced the parenchymatous lesions are, or whether the nerve cell functions are impaired secondarily to the effects of endarteritic or perivascular infiltration. Clinically the patient may have identical symptoms if the nerve cells are out of function anatomically or physiologically. It is to be expected that the improvement might occur spontaneously or from the effects of treatment in the patient whose cortical cells are impaired in the physiological sense; i. e., perivascular infiltration or endarteritic lesions. Formerly it was often said that if a patient with a paretic symptom regained his mentality as a result of treatment that he was not a paretic. Such a patient is a true paretic, but in that stage of physiological functional impairment that precedes the anatomical destruction of the nerve cells.

For the sake of brevity remarks concerning the diagnosis of neurosyphilis and symptomatology will be omitted because nothing will be

added to the interest of the subject of this talk and will take us somewhat a-field.

Treatment. The treatment of syphilis has long been based on the use of so-called specific drugs. It must be admitted that these specifics are specific only to a degree. They will hold in abeyance the progress of the disease and may even cure certain cases. It would perhaps be better to regard these drugs not so much as absolute specifics but merely the best and nearest specific treatment we have for syphilis, and we are, therefore, not to overlook any benefit the patient may derive from multiple therapy.

Just as in generalized syphilis, mercury, bismuth and arsenicals are used in neurosyphilis. It is important not to overtreat the neurosyphilitic, especially in the early weeks of treatment. Nervous Herxheimer reactions occur just as surely and with just as ultimate seriousness as in visceral syphilis. The more acute and more serious may cause the death or serious relapse of the patient. The less serious may cause marked exaggeration of mental changes which takes weeks of careful treatment to overcome.

In our experience in about four hundred cases of neurosyphilis, tryparsamide is the therapeutic sheet-anchor. This drug is a therapeutic enigma. It is not spirocheticidal² yet it renders the nervous system more able to relieve itself of perivascular infiltrations and has a beneficial tonic effect on the body as a whole. If given too energetically the first few months, harm usually results in the form of relapses or ocular disturbances. The drug easily penetrates through the meninges and relatively large quantities of arsenic may be found in the spinal fluid.³ Thus we have a drug that is a boon to the meningo-vascular and paretic patients and which effects the spirochete in an indirect manner. To this beneficial effect should be added the spirocheticidal effect of mercury, bismuth or the arsphenamin—to add a curative effect to the tonic effect. It should always be the aim to treat the patient rather than the disease and not to force the patient into a routine course of treatment regardless of his suitability for the prescribed routine. Whenever possible the patients were routinized as follows:

Week	Tuesday	Friday
1	*Bich. ....0.015 gms. (gr. ¼)	Neo. ....0.3 gm.
2	Tryp. ....1.0	Bich. ....0.03
3	Neo. ....0.45	Tryp. ....1.5

4	Bich. ....0.06	Neo. ....0.6
5	Tryp. ....2.0	Bich. ....0.006
6	Neo. ....0.75	Tryp. ....2.5
7	Bich. ....0.06	Neo. ....0.9
8	Tryp. ....3.0	Bich. ....0.06
9	Neo. ....0.9	Tryp. ....3.0
10	Bich. ....0.06	Neo. ....0.9

* (Bichloridol, Metz. Given intra-muscularly. This may be replaced by bismuth preparation given in the same manner.) Tabetic patients are more benefitted by the use of mercury cyanid 10 to 20 mg. intravenously.

After the end of the first course, a rest period of four to six weeks is given when treatment is renewed. This time the drugs may be started in somewhat larger dose but they are not to be increased above the maximum amounts indicated. The clinical results of such treatment are summarized in the following tables for sake of brevity. (Table 1).

It was then thought that a more severe test of our treatment would be on an economic basis since a patient may be clinically well but unable to return to his work. Table 2 gives an indication of the results from this viewpoint. (Table 2).

It is worth while to take up under a separate heading one of the most relentless and tragic complications of neurosyphilis; namely, optic atrophy. Oculists estimate from 6 to 15 per cent of all blindness⁵ is caused by syphilis. The literature indicates that from eleven to forty-one per cent of untreated neurosyphilitic patients have visual disturbances. Lillie's⁶ series had some sort of ocular disturbances in 50 per cent of patients. He found that treatment with the arsphenamine diminished the incidence of ocular lesions and that tryparsamide (in spite of its rather bad reputation) was even more effectual than the arsphenamines. Tables 3 and 4 summarize the findings in my experience, showing that well over half of the patients can either be arrested in their downward progress or actually somewhat improved by tryparsamide therapy (Tables 3 and 4).

During the past three or four years another method of treatment is being used. I have had a slight degree of experience with this method of intracysternal injection in desperate cases. Gifford⁸ has had the largest experience with this form of treatment and considering the prognosis of his patients his results have been brilliant. He has been able to arrest and improve patients who were doomed to blindness.

The treatment of neurosyphilis by malaria has

been popularized during the past four years. The exact mechanism of action is not known and about thirty per cent of the patients in collected statistics are much improved, as contrasted to about forty per cent in tryparsamide statistics. On the one hand unwise use of tryparsamide may cause blindness, but malaria causes death in ten to thirty per cent of parietic patients. Tabetics are not notably improved by malaria or any other method. Solomon⁹ has used sodoku, or Japanese relapsing fever, for the same purpose and got the same general results without the untoward results of malaria. Recently Schamberg¹⁰ has been studying the effects of hot baths on syphilitic patients. We are making observations on a small series of Wassermann-fast neurosyphilitics. Thus far results have been encouraging for the use of hot baths as an adjunct treatment but it is still too early to commit oneself in recommending their use.

SUMMARY

The treatment of neurosyphilis is now in a gradually improving status. Meningo-vascular types are for the most part successfully treated with tryparsamide and other anti-syphilitic drugs. Tabes dorsalis is handled slightly better than a decade ago. Paresis has been given a different outlook by the advent of tryparsamide and malarial therapy. One is no longer justified in concluding that the parietic patient is doomed until he has had one or the other method tried. Optic atrophy is apparently on the threshold of more successful methods of treatment.

TABLE 1

Diagnosis	No.	Clinical		Serological		Ocular	
		Date available		Disturbances*			
		Improved	Per cent	Arrested	Per cent	Worse	Per cent
Meningo-Vasc							
93 Lues							
Active (1)	44	83.0	8	15.1	1	1.8	23
Inactive (2)	21	52.5	11	27.5	8	20.0	16
74 Tabes Dorsalis							
Active	22	64.7	11	32.3	1	3.0	13
Inactive	12	30.0	20	50.0	8	20.0	8
63 Paresis							
Active	82	82.0	5	12.8	2	5.0	20
Inactive	5	20.0	8	33.3	11	45.8	12
230 Totals	136	59.1	63	27.4	31	13.4	92
Ocular disturbances due to tryparsamide.							
Including dead from all causes.							
(1) On treatment.							
(2) Off treatment.							

TABLE 2

Economic Status of Patients Before and After Treatment
Beginning of treatment After being treated

Diagnosis	Not working			Working part-time			Working full time			Not working			Part-time working			Working full-time		
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%	
Central Nervous System																		
Lues	46	49.4		23	24.7		24	25.8		16	17.2		15	16.1		62	66.6	
Tabes																		
Dorsalis	47	63.5		9	12.2		18	24.3		32	43.2		13	17.5		29	39.2	
Paresis	61	96.8		1	1.6		1	1.6		25	39.6		17	27.0		21	33.3	
Total	154	66.9		33	14.3		43	18.7		73	31.7		45	19.5		112	48.7	

TABLE 3. MANIFESTATIONS IN NORMAL PATIENTS

	Patients	
	Number	Per cent
Eye complications in normal patient.....	8	5.2
Blurred vision sufficient to omit treatment temporarily	4	2.6
Moderate visual field constriction.....	3	1.9
Marked visual field constriction.....	5	3.2
Improved when treatment was withdrawn..	3	1.9
Unimproved when treatment was withdrawn.	2	1.3

TABLE 4. MANIFESTATIONS IN ABNORMAL PATIENTS

	Worse Improved Unchanged					
	No.	No.	Per cent	No.	Per cent	No.
Abnormal patients treatment..	27	10	37.0	4	14.8	13
Optic atrophy*	16	4	27.4	2	12.5	8
Slightly or moderately con-						
stricted fields	10	4	40.0	2	20.0	4
No atrophy: Chorioretinitis...	1	0	0	0	0	1

*Three patients became blind; one improve; one's progress hastened by treatment; the other neither hastened nor retarded.

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SCARLET FEVER*

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Six years ago, we began the publication of a series of experiments which established a specific type of hemolytic streptococcus as the cause of scarlet fever. In these experiments, it was shown that the scarlet fever streptococcus produces a potent soluble toxin which is responsible for the toxemia, nausea and rash, and that recovery from the disease with subsequent immunity depends on the production of an antitoxin. This antitoxin is capable of neutralizing the scarlet fever toxin in vitro. The conclusions as to the etiology, specific toxin and antitoxin of scarlet fever have been verified by reports too numerous to detail here, published in this and other countries. They include the work done by Nicolle in the Pasteur Institute at Tunis where all of the crucial experiments were repeated, including even the production of experimental scarlet fever in human beings.

The manufacture of soluble toxins by streptococci was a new conception. It had been thought that true toxins were concerned in comparatively few diseases such as diphtheria, tetanus, botulism and some forms of dysentery; all of which are caused by bacilli. The discovery that soluble toxins may be produced by streptococci opened a new field for medical research in which many investigators are now engaged in attempts to demonstrate and differentiate toxins from various kinds of streptococci.

Scarlet fever toxin and the corresponding antitoxin have furnished the means for controlling the disease through the development of:—

First—A method of identifying scarlet fever streptococci.

Second—Control of quarantine by means of nose and throat cultures on blood agar plates.

Third—A skin test for determining susceptibility to scarlet fever.

Fourth—A method of active immunization of susceptible persons.

Fifth—An antitoxin specific for scarlet fever for use in the treatment and in the prevention of the disease.

Results are now available from observations made during the past six years in a series of

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32,440 persons on whom skin tests were made and on 11,584 susceptible persons who were immunized against scarlet fever by injection of graduated doses of the sterile toxin and on groups of susceptible individuals found to be infected after exposure who were given prophylactic doses of antitoxin. All of these persons were exposed to scarlet fever in one or more epidemics. Results are also available from a series of 967 cases of scarlet fever in which the antitoxin was employed therapeutically.

The technique of the skin test for susceptibility to scarlet fever is exacting. Among the common sources of error are inadequate syringes and needles; attempts to sterilize the syringe and needle with alcohol, which precipitates the minute amount of toxin in the skin test solution; failure to replace the water left in the needle after boiling with skin test solution by expelling at least one-tenth cubic centimeter of solution through each fresh needle used; boiling the syringes and needles in alkaline tap water instead of distilled water; estimating the amount of skin test solution injected by the size of the wheal produced instead of accurate measurement by graduations on the syringe; subcutaneous instead of intracutaneous injection; and failure to observe the reaction between 18 and 24 hours after the test is made. The commonest error of all is interpreting positive reactions as negative. The almost universal tendency to regard slightly or even moderately positive reactions as negative may be due to familiarity with the Schick test which is usually interpreted as negative unless there is induration. Skin reactions with scarlet fever toxin are never indurated. They should be observed in a bright light between 18 and 24 hours after the injection. Observations made after 24 hours are not reliable. The slightest flush or reddening, no matter how faint the color, constitutes a positive reaction if it measures as much as ten millimeters in any diameter.

The reliability of the skin test in determining susceptibility to scarlet fever is shown by the results in 20,856 persons with spontaneously negative reactions. All of these immune persons have passed through one epidemic of scarlet fever and some have gone through several epidemics without contracting the disease; with the possible exception of one boy who desquamated

on the feet and gave a history of having had a sore throat. The most severe test of the skin reaction is found in a group of 2,157 pupil nurses and internes who were allowed to go on contagious disease services when their skin tests were found to be spontaneously negative. In spite of prolonged and intimate exposure to scarlet fever, none of this group contracted the disease.

New born infants frequently show negative skin reactions which become positive during the first year of life. After early infancy, the incidence of immunity to scarlet fever depends on conditions which favor exposure to the disease. Immunity is not related to age or sex except indirectly as these factors influence the frequency of contact with other people. The most important factor in the spontaneous development of immunity is crowding which favors the transfer of contagion and immunization through infection. Figures showing incidence of susceptibility to scarlet fever in one group do not give an idea of what the incidence of susceptibility in another group might be unless the living conditions are practically the same. In an overcrowded institution the incidence of susceptibility may be as low as 10% and in rural or suburban groups it may be as high as 85%.

In a series of skin tests it will be found that the positive reactions show all gradations, from small areas of faint color to intensely red reactions three to five centimeters in diameter. These differences in the intensity and size of the skin reactions correspond to differences in degree of susceptibility and partly explain the great variation in severity of scarlet fever. The intermediate stages of the reaction also indicate that, in many persons, immunity to scarlet fever is acquired gradually through repeated infections with scarlet fever streptococci without the development of a typical attack of the disease. It has been learned that one attack of scarlet fever sore throat does not necessarily confer complete immunity; while typical attacks of scarlet fever usually result in complete immunity as indicated by negative skin reactions in convalescent scarlet fever patients and the comparative infrequency of second attacks of the disease.

Active immunization with graduated doses of sterile scarlet fever toxin in 12,775 susceptible

persons caused no injury in any instance. In three institutions, urine analyses were made before, during and after immunization. There was no evidence of nephritis caused by the immunization. Some persons who had nephritis were immunized without causing an exacerbation of the condition.

In a large series, including highly susceptible individuals, general reactions may be expected in about 10% after each dose. But this 10% is not composed of the same individuals after the different doses. The most highly susceptible persons usually react more strongly on the first doses; others may not have any reactions until the fourth or fifth dose is given. As a rule reactions after the last and largest dose are fewer and milder than after the smaller first doses. The immunizing doses should be accurately graduated and it is important to give them in the proper sequence in order to avoid unnecessarily severe reactions. But mistakes have been made in which the last dose has been injected as a first dose and no fatalities have occurred. Experimentally, we have injected as much as twenty cubic centimeters of undiluted toxin, containing nearly one million skin test doses, without causing injury and without producing nephritis in human beings.

The larger immunizing doses of toxin give a higher degree of immunity in a higher percentage of susceptible persons. In much of the work reported, small doses have been employed. We have not been able to verify the results of those who claimed negative skin tests in 85% after a maximum dose of three thousand skin test doses of preserved toxin. Neither have we been able to verify the claims as to the protective value of ricinoleated toxin described by Larson. We used Larson's material in three one cubic centimeter doses and found that it caused more severe reactions than followed the graduated doses of toxin. The skin test did not become negative in any of the susceptible persons who received the Larson preparation and, on subsequent exposure to scarlet fever, a number of them developed the disease. The wide use of a commercial preparation of the ricinoleated toxin and the unfounded claims made for it by the manufacturer have done much to discredit the new methods for the control of scarlet fever and tend to discredit preventive immunization in general. In spite of our repeated warn-

ings against this preparation, it has been widely distributed and employed by physicians in unsuccessful attempts to control epidemics of scarlet fever.

The doses of sterile toxin for active immunization should be graduated, beginning with five hundred skin test doses in the first injection and increasing to eighty or one hundred thousand skin test doses in the last injection. The injections are made subcutaneously at intervals of one week. If the full amount is given in each dose, the five doses may be counted on to immunize completely 95% of susceptible persons and to considerably modify the susceptibility of the remainder. Two weeks after the last dose is given, another skin test is made, using one-tenth cubic centimeter of the skin test solution, or one skin test dose, on the right arm and two-tenths cubic centimeter, or two skin test doses, on the left arm. If the reaction on either arm is positive, the fifth dose is repeated.

Unless the immunization is carried to the point of a negative skin test, complete protection against scarlet fever cannot be expected; though the severity of a subsequent attack of scarlet fever would be modified by the partial immunization.

The duration of active immunity as well as the degree of immunity depends on the amount of toxin injected. Retests made at intervals of one, two and three years indicate that more than 90% of those immunized to the point of an entirely negative skin test retain their immunity. Between 5 and 9% slip back and require a second immunization.

Under ordinary conditions, not more than 10% of contacts become infected with scarlet fever streptococci, but in institutions where the inmates are in contact with one another during most of the twenty-four hours, more than 50% may become infected during a prolonged epidemic of scarlet fever and it may be expected that eventually most of the susceptibles will develop scarlet fever in some form. Conditions in institutions where the disease is epidemic are favorable for determining the efficacy of active immunization in controlling scarlet fever. A number of such institutions have been under observation during the past six years. Skin tests were made on every one and the susceptibles were immunized with graduated doses of toxin. No case of scarlet fever has occurred among 11,584

susceptible persons immunized in institutions where scarlet fever was epidemic. Controls were furnished by typical cases of scarlet fever developing in newly admitted persons who had not been tested and immunized before they were introduced into the infected community, and by cases of scarlet fever in teachers and attendants who refused immunization.

An opportunity to study results of active immunization is also found in 1,191 susceptible nurses and internes immunized before they began work in contagious disease hospitals. These artificially immunized persons have had the same prolonged and intimate exposure to scarlet fever as the naturally immune nurses and internes. None have contracted the disease. Controls in this group are furnished by thirty-seven cases of scarlet fever in nurses and internes who entered before they had been tested for susceptibility or who were known to have positive skin reactions and had not been immunized.

Since persons who are immune to scarlet fever do not require protection, the indiscriminate administration of prophylactic doses of scarlet fever antitoxin to contacts is not justified. If it is not possible to make skin tests and nose and throat cultures on blood agar plates to determine which contacts need antitoxin, it is better to watch all of them closely and give a therapeutic dose of antitoxin on the development of any symptoms suggestive of scarlet fever.

Where it is possible to make skin tests and cultures and establish quarantine separating the infected from the non-infected persons, active immunization with the toxin of the non-infected susceptibles may be begun at once and prophylactic doses of scarlet fever antitoxin may be given to persons who are both susceptible and infected.

By the use of nose and throat cultures on blood agar plates, skin tests for susceptibility, active immunization with the toxin, and use of antitoxin prophylactically in infected susceptibles, it is possible in a group, small enough to test and culture in one day, to bring an epidemic of scarlet fever under control in 48 hours.

The passive protection conferred by a prophylactic dose of any antitoxin is transient, lasting at the most two to three weeks. Active immunization with the toxin should be begun in the

infected susceptibles one week after the prophylactic dose of antitoxin is given.

Scarlet fever antitoxin may be employed therapeutically with advantage in all cases of scarlet fever as soon as the appearance of the rash suggests the diagnosis. Given early in adequate dosage, scarlet fever antitoxin gives brilliant results. The patient sometimes recovers so promptly that the attending physician wonders if he could have been mistaken in the diagnosis of scarlet fever.

The longer the patient goes without antitoxin, the less he benefits from the antitoxin when it is given. It should not be withheld until it becomes apparent that the attack is a severe one but given in time to prevent the development of a severe attack.

Reports as to the effect of scarlet fever antitoxin in reducing complications are sometimes conflicting due to delay in administering the serum and to the use of poor preparations of antitoxin. Most scarlet fever antitoxin of European manufacture is considerably weaker than the best American serum. Samples purchased in Europe have been found to contain from a trace to five thousand neutralizing units per cubic centimeter, while the best American serum contains thirty thousand units.

Scarlet fever patients in hospitals do not furnish the most favorable material for determining the therapeutic value of the antitoxin because administration of the serum is delayed until the diagnosis of scarlet fever has been confirmed, the health department notified, and arrangements made for transferring the patient to a hospital. But, even with the delay involved in such cases, it has been shown that scarlet fever antitoxin reduces the incidence and severity of complications. Results in the antitoxin series, which included the more severe cases, compared with results in the control series, comprised of the cases which, on admission to the hospitals, appeared to be less severe, show that mastoiditis occurred three times as frequently in the control series as in the antitoxin series; the incidence of post scarlatinal nephritis in the control series was four times that in the antitoxin series; and in spite of the milder appearance at the onset, the death rate in the control series was twice that in the antitoxin series.

637 South Wood Street.

SMALL AND LARGE QUANTITIES OF RADIUM IN THE TREATMENT OF MALIGNANCY OF THE MUCOUS MEMBRANES*

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The other day a famous surgeon said: "One can do a million dollars worth of harm with a nickel's worth of radium." We have often contended that one thousand or more milligrams of radium is of most value in cancer, when it is used at *one time on one patient*—not when it is distributed to 20 or more patients at various points of the compass.

Radium treatments for cancer, at least in cases of serious cancer, should be carried out as an institutional problem.

When cases cease to be ambulatory, i. e., are confined to the house or bed, they are usually in such an advanced stage of the disease that all treatment is useless, except from the standpoint of relieving pain, using antiseptic dressings, etc.

Large quantities of radium, such as one or more grams, cannot easily be transported and the apparatus for protecting patients and nurses is not easily handled.

The technic of radium treatment is very complex. It cannot be taught in a day or year. Only long and varied experience in applying the right kind of treatment to different cases can result in the greatest good.

Radium treatment may actually and easily do harm, either from improper doses or by depriving patients of other kinds of treatment which might be more helpful than radium.

In the application of radium or radon to malignant lesions of the mucous membranes, one of the problems is—how can we get a more parallel ray?

Obviously, by increasing the distance of the radium from the lesion. When one does this, however, one must evidently increase the quantity of radium.

Only in this way can homogeneous irradiation of a lesion of much size or depth be accomplished.

Prolonging the time of application does not compensate for the lack of a sufficient quantity of radium except within rather narrow limits.

A second principle of the irradiation of a lesion of the mucous membranes is that it should not be irritated or traumatized.

The advantages of applying radium for minutes instead of hours would appear to be self-evident.

One should not forget that every cancer of the mucous membranes is potentially fatal.

In trying to estimate the relative value of small or large quantities of radium, one should remember that the method of practice of a certain group of radiologists does not alter the fundamental principles of radium treatment.

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THE PRE-RADIUM TREATMENT OF UTERINE CERVICAL MALIG- NANCY*

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Most surgeons and gynecologists are now agreed that once a definite diagnosis of uterine cervical cancer has been made, the case is one for radiation treatment, with the possible exception of the infrequent Stage I growths (small growths clearly localized within the cervix), in which surgery or radium may be used with equal success.

Since the use of radium in uterine cancer is a hospital procedure and the patient is not acutely ill, this frequently incurs some delay until consent has been secured to proceed with the treatment. Many women will delay some weeks "getting ready" to go to the hospital. What treatment should the patient receive in the interval? Should the physician administer no treatment in uterine cervical malignancy until radium is actually applied?

It is a fact that the majority of patients suffering from cervical cancer when first seen by the physician, already present an advanced stage of the disease. Schmitz, in his analysis of 332 cases, found that 49 per cent. had Stage III growths when treatment was first begun and 30

*Read before the Section on Radiology, Illinois State Medical Society, Peoria, May 22, 1929.

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per cent. had Stage IV growths—a total of 79 per cent. advanced lesions. Other writers report statistics in about the same proportion, many stating that the Stage III growth is the most frequently encountered at the time radium is applied. (Stage III growths comprise those where there is in addition to involvement of the cervix, an induration of the contiguous tissues. The growth has left the cervix and either one or both parametria or regional lymph nodes have been invaded, a fact which can be elicited by rectal examination. The tumor mass is movable, though elasticity of the tissues is lost.)

External Radiation. When radium is applied in the uterus or vagina, its ability to successfully destroy cancer cells probably does not reach beyond 2 or 3 cm., from the source of the radium. It is apparent, therefore, in Stage III or IV cervical growths, that radium alone can not be expected to control the condition and that additional radiation from without is also necessary. This can be applied in the form of high voltage (200,000 volts) x-ray treatment, or by means of the so-called "radium pack" by which the entire pelvis is cross fired through a number of different portals. In such advanced cases, the question is, should this external radiation precede the internal radium treatment or not? There appears no question that the parametrial involvement is the greatest source of danger to the patient and may result in perforation into the rectum or bladder, or permit the growth to spread beyond the pelvis. It is also true that the outer limits of a tumor are usually the most active in growth. In view of the above, would it not appear more logical to administer the external radiation first?

The views of Prof. Claude Regaud (Associate of Mme. Curie), of the University of Paris, who has had perhaps as wide an experience as anyone with radiation treatment of cancer, are interesting in this connection.

Regaud believes that any attempt to reach the parametrial involvement in cervical cancer by radium needles, implants, seeds, etc., is not good practice. He contends that the interstitial use of radium in this region is dangerous. The simultaneous employment of radium puncture and intra-utero-vaginal irradiation may cause secondary rays excited by the impingement of gamma rays on the platinum needles or seeds.

Such beta therapy increases the danger of radium necrosis. Regaud states that the association of x-rays or radium at a distance, with radium applied utero-vaginally, is the correct method when the parametrium is invaded. He contends that if x-rays are used to give the external treatment, they should always precede the radium treatment, while if external radium therapy at a distance is used (radium pack) it should follow the internal radium therapy.

Pack, in describing Regaud's method, states:

The association of radium therapy with roentgen therapy is for the purpose of securing the combined action of the x-rays (in the peripheral part of the neoplastic territory) and of radium in the uterus and vagina. When the neoplasm has extended beyond the uterus (parametrium, vagina, pelvic adenopathies) this combination is the method of choice and is the rule in the majority of instances. Regaud believes that the order of succession of these two agents is not an indifferent matter. The inefficiency of the x-rays in the treatment of recurrences following previous radium therapy has been shown by Regaud (1923) *apropos* of epitheliomas of the skin and mucous membranes in general. X-rays are especially inefficient after radium therapy has been given by the utero-vaginal method. To use these agents in the correct combination roentgen therapy should be administered first, followed immediately, or after a very short period of rest, by radium therapy.

Cervical Infection. A factor that many American radiologists in treating malignancy have not given proper consideration, is the local infection that accompanies so many of these growths. The role of infections in the dangers and complications of radium is particularly *apropos* in cancer of the uterine cervix. Local infection invariably accompanies cervical cancer at the moment it opens into the vagina. The infection usually progresses with the progress of the cancer and probably does as much, if not more, to break down the resistance of the patient than does the growth itself. The infection is at first superficial, but later extends deeply and the infiltrations that one palpates may be due to infection, new growth, or both. If an attempt is not made to first control this, radium may transform the local infection into an acute pelvic cellulitis, a suppurative salpingitis, a circumscribed phlegmon of the pelvic tissue, a generalized peritonitis, or a septicemia.

The rapidity with which some physicians apply radium, immediately upon diagnosis of a cervical cancer and without any preliminary

treatment, is to be condemned. A better procedure is to give antiseptic vaginal douches several times each day until the local infection is controlled. Pack, in describing Regaud's preliminary radium treatment states:

The putrefactive microbes disappear readily under this local treatment, but the pyogens, namely, the staphylococcus and streptococcus, are more difficult to destroy. Autogenous vaccines are responded to by the staphylococci, but the streptococci, particularly those of the dangerous hemolytic type, are very resistant. In every instance where internal radium therapy has been followed by severe pelvic infection, the preceding bacteriologic analysis has demonstrated the presence of hemolytic streptococci: on the contrary, not every patient harboring these streptococci within her vagina will suffer this complication.

The ablation or curettage of cancerous vegetations of the uterine cervix has certain advantages; it facilitates treatment; it may suppress the suppuration from the infected cervix; it frees the implantation of the cervical tumor from the orifice of the uterine canal; it permits closer approximation of the radium foci to outlying cancer tissue; it favors cicatrization and lessens the danger of toxemia from absorption. A bleeding, infected, sphacelus, "cauliflower" cervical tumor should be amputated, preferably by diathermo-coagulation, previous to the introduction of the radium into the vagina and uterine canal.

Kaplan, in describing the method used at Bellevue Hospital for these patients, states:

Treatments are planned according to the extent of the lesion present. If marked ulceration and infection are present in the vagina, a course of disinfection with douches initiates the treatment. The patient is shaved and cleansed externally; the bowels are cleansed with enemas. Douching with boric acid solution or with 2% glucose solution twice daily is carried out until the vagina has been thoroughly cleansed and much of the induration about the cervix reduced. Following this, the vagina is irrigated with 2% methylene blue solution, a mild antiseptic which seems to clear up the infection more rapidly. Radiation is not begun until the disinfection or cleansing is completed, so little infection is present in the vagina when the treatment is applied. Meanwhile the general condition of the patient is improved by dietetic and hygienic methods. Constipation, which is present in nearly all cases, is treated by mineral oil and magnesia and enemas if necessary.

Pinch, in describing the technic used at the internationally known Radium Institute of London states:

Patients suffering from carcinoma of the uterus often present themselves in a condition which negates any attempt at immediate treatment. The cervix, fornices and vaginal walls are extremely ulcerated, covered with washleather sloughs, and exude a con-

stant copious purulent offensive discharge. It is of the utmost importance to render the diseased surfaces as clean as possible before using radium. Douches of Tr. Iodi. drams 1 to 1 pint of warm water, should be used two or three times a day, a Ferguson speculum should be passed, and any loosely adherent sloughs detached with forceps or a probe covered with cotton wool. This treatment should be persisted with until all detritus and sloughs have been removed and the discharge is no longer offensive. If the iodine douche proves unduly irritating, glyco-thymoline (1-20) may be substituted for it in the later stages. A douche of Flavine, 1 in 2,500, should be given on the day before, and early in the morning of the day on which the radium is inserted.

During this preliminary treatment the patient, if able, may be up and around. She should be thoroughly examined to determine the extent of the lesion and to ascertain if any distant metastasis is present. X-rays of the chest, spine and pelvis are valuable in ruling out metastasis in these parts which are favorable areas for the growths to appear.

After a week or 10 days of preliminary treatment the cervical canal should be gently dilated by the use of graduated uterine sounds, and the length of the uterine canal obtained. The patient is then returned to bed and her temperature taken at frequent intervals for 24 hours. If there is no increase in temperature the patient is ready for the internal radium treatment.

Preliminary Radium or Electro-Thermic Amputation. When the cervical canal is filled with a cauliflower growth or an ulcerating growth at the external os, and localization of the cervical canal is impossible, the patient should not be given the principal internal radium treatment. Such cases should receive preliminary radium therapy usually by the imbedment of radium needles or implants, or the cervix should be removed by electro-thermic measures.

Kaplan, Pfahler and others advocate the amputation of the cervix or the removal of malignant masses by electro-thermic means immediately preceding the insertion of radium in certain cases (small per cent) of cervical cancer—as when the cervical canal is obstructed by a large cauliflower growth blocking the vagina or there is much hypertrophy of the cervix associated with a large amount of fibrous tissue which may help to shield carcinoma cells. When such treatment is given preliminary radium therapy is not necessary, as the uterine canal is

rendered patent and the principal radium treatment can be readily carried out. Sometimes complete removal is not possible. In such instances, as much growth as feasible is removed and then radium needles are inserted in the remaining mass. When the mass has receded the uterine canal may be located and the principal radium treatment carried out. It is well to remember, in constructing radium applicators for such cases, that the uterine canal will be shortened because of the amputation.

If preliminary radium is used the uterine canal will usually become sufficiently patent in 10 to 20 days to permit the introduction of an intra-uterine radium applicator. In fact, these cases usually respond remarkably to such preliminary radium treatment. There is a danger that the patient or physician may think that further radium is not necessary because the excrescences are cleared up so readily.

Preliminary radium treatment or electro-thermic amputation is absolutely necessary in all cases where the growth has proliferated to such an extent as to occlude the cervical canal, if the maximum results are to be secured. The principal radium treatment should not be given until the uterine canal is rendered patent. Many radiologists are now of the opinion that the best results from radium in cervical cancer can only be secured by treating the entire uterus with heavily filtered radium. This necessitates the predetermining of the length of the uterine canal, in order that the proper type of applicator may be provided.

CONCLUSION

In conclusion the following in regard to pre-radium treatment of cervical cancer should be emphasized:

1. Every case of advanced cervical cancer should receive external radiation and if this is given by high voltage x-rays, it should preferably precede the internal radium treatment.

2. Local infection constantly accompanies cervical cancer and no case should receive internal radium treatment until the infection has been controlled by suitable douches, etc.

3. The principal internal radium treatment should not be given until the uterine canal is patent. If the canal is occluded it should be treated by preliminary radium until rendered patent, or the cervix should be amputated by

electro-thermic measures preceding the principal internal radium therapy.

211-224 W. C. U. Bldg.

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DISCUSSION ON PAPERS OF DRs. FLESHER AND SIMPSON AND DR. HAROLD SWANBERG

Dr. Thomas D. Cantrell, Bloomington: In connection with the paper on "Pre-Radium Treatment of Cervical Cancer," as an exclusive treatment, the whole thing seems to me in radium to be the question of filtration, just what ray we want to utilize under certain conditions. In my estimation, we will never be able to find a certain ray that might be utilized for the treatment of all conditions, but we have to develop that within us so that when we examine a patient, using all the means to ascertain the real malignancy and so forth, eventually we will be able to determine the amount of filtration we want to use, whether we want to use less filtration for the destruction of tissue or whether we want to use the gold filter for a longer length of time.

It is going to depend upon the time and energy, with us, to ascertain what treatments we are going to use.

My work has been limited largely to the use of the element. I have had little experience in emanation. We have had a beautiful result recently from a cancer of the mouth, the hard palate, with the glass emanation. We are also using the starvation method by ligating the arteries that supply the part, depending upon the collateral circulation. In this we seem to be getting fine results.

It is a study, and a problem not solved yet, as to what ray we want to use. That is an open question and we must spend a great deal of time upon it; it will take perhaps several years to work it out in the most efficient manner.

The newest thing, and the best thing, I think, of all in making the application of radium, is preparing the field carefully before we make the application. We thought radium or x-ray was a thorough antiseptic and would cleanse its own field. We have found that is a misnomer, and we must prepare the field before we apply the radium or x-ray.

I feel the radium has its field, the emanation has its field, but not to the exclusion of the x-ray. If

you had two or three million dollars worth of radium, you might put it off fifty centimeters distance and get the same results as with high voltage x-ray, but that is impracticable.

I believe the work is only half done, when it is done by the man who uses the radium alone; that he must use both in these cases, and they must work together.

Dr. Henry Schmitz, Chicago: The statement made by Dr. Swanberg regarding the treatment of the periphery of the bony pelvis in primary pelvic cancers is a timely one. Those who see a great number of pelvic carcinomas that have been treated only with radium and that develop pain after a local healing due to peripheral extension and growth must conclude that radiation of the parametria might have prevented such a complication. This is the reason why we use a combination of deep roentgen and radium treatment. It is evident that the action of radium is local and the action of roentgen rays is diffuse.

In Chicago, for the last year and one-half, we have been using a radium pack built on the same idea as an x-ray tube. The radium is contained within an area of three centimeters diameter. The pack is placed at a distance of ten centimeters from the patient. It has a heavy outer lead tube, $2\frac{1}{2}$ cm. thick, surrounded by aluminum, so there is no possibility of any secondary radiation striking the patient. The filter thickness is 5 mm. of brass. We have used it not only in cervical carcinoma but also in the neck and outer regions. The results come nearer to homogeneous radiation than anything else of which I know. We have not seen any better effect than we would have obtained with a similar dose of x-rays. The output of the radium pack has been determined with the same dosimeter as used for the x-rays. Under these conditions we give 25,000 milligram hours of radium to obtain the same result as with the x-rays.

It has been my experience that if one uses any kind of a metallic substance in a radiation field the secondary radiations are quite heavy and rather destructive.

Dr. C. W. Hanford, Chicago: I think we can all see that radon has met a long felt want, especially where the size of the applicator is the thing to be considered. There is, of course, the possibility of not being able to use a tube or radium needle where the small gold implant would be of advantage. Further, I do not think radon has done anything in particular over the radium element. In fact, I know it has not. I commend Dr. Schmitz for stating the point regarding the use of these applications.

In regard to the treatment of carcinoma of the inside of the cheek, instead of using radon, I have been extremely successful in using radium. In the concave surface I use the dose of radium I desire, I employ a teaspoon, screening as indicated, and using

a rubber cover and strapping it in with adhesive. On the convex portion I place about five millimeters of lead, covered with a layer of aluminum and strap that on, covering the whole with rubber tissue. I introduce this spoon into the mouth with the concave portion toward the lesion, and then bend the handle around to the cheek and strap it on.

I am a great believer in the direct application of radium to eliminate as much of the trauma as we possibly can, which trauma results from needle insertion.

Dr. Rollin H. Stevens, Detroit, Michigan: I have been very much interested in the papers presented this morning.

In regard to Dr. Swanberg's paper on the treatment of the uterus, I agree with a good deal of what he has said. Yet I am impressed with some things which I think are not quite as important as they are made to appear. In regard to the disinfection of the vaginal canal and the uterus, I don't believe it is possible to disinfect that canal by local applications. Possibly some of it can be accomplished by vaccines, as he says.

I believe in cleanliness, but I think the attempts to completely sterilize the vaginal canal by toxical disinfectants have perhaps been stressed a little bit too much, especially when treatment is begun with the x-ray and followed by radium.

As Dr. Schmitz said, it does not make any difference what ray we use so long as we get the proper amount of energy into the tissues we wish to treat, and if we can accomplish that with the deep x-ray, we are going to succeed. One reason for using the x-ray before radium in cancer of the cervix is because there is great danger of expressing cancer cells into lymphatics by the trauma caused by the dilatation and introduction of the radium tube.

I wish to ask a question about radon therapy. Dr. Schmitz stated it made no difference whether you used radon, radium element, or x-ray. In the use of radon are we not dealing with a constantly decreasing amount of energy during treatment? And from what we know about the biological effect of radiation upon disease cells, would it not seem that the quantum of radiation should be kept constant or really increase? That we ought to keep up a saturation? With the radon we are getting constantly decreasing intensity of radiation, whereas, with the element we are keeping up a constant saturation with the energy we are using. Therefore, it would seem that radium element serves the purpose better than radon.

I don't want to be misunderstood in saying I don't believe in any of the cleansing methods or douching. I certainly do, but I thought perhaps we were trying to do too much of it.

I want to say I have been using for the last year or two gauze packing with my radium and I found that I can leave that in the vagina for four or five or six days with radium in the uterus and vagina, without

having offensive discharges from the vagina. It comes out sweet and clean. You might think you would get characteristic radiation from the iodoform that might do harm, but I have not seen any bad results.

Dr. W. Walter Wasson, Denver, Colorado: A few years ago I saw a woman, in her late thirties, with cervical cancer. She received the usual deep therapy and the cervical application of radium. After her treatment she developed an induration of the vagina with an encroachment upon the canal, which was very puzzling to me. It was impossible for me to distinguish this condition from definite malignant involvement.

I felt very much discouraged with my treatment. I felt that I had either overtreated this patient, causing a cicatricial contraction that was harmful, or else that I had not overcome the malignant involvement. I put that patient upon a vaginal douche treatment and very much to my surprise her condition cleared. She improved slowly, and she is entirely well today after four or five years. I think that experience may help others. It has helped me a great many times since when I was in doubt as to whether I had a malignant induration following treatment or duration and proliferation of tissue from infection.

I do not know that we can completely sterilize the vaginal canal by douches, but I do believe we can do a great deal towards removal of proliferation of tissue as a result of infection.

Dr. Swanberg (closing): Dr. Magee showed the arrangement of applying radium in the vagina in cervical malignancy. I believe the use of a colpostat is much more effective than that which was presented. The colpostat consists of two barrels containing radium, which are held together with a spring, the radium being held in position in the lateral vaginal fornices. The advantage of the spring is that it holds the applicator in position and nearer to the parametria than by any other method.

In regard to Dr. Stevens' remarks about preliminary douching, I think the preliminary douche is important, especially if marked infection is present. I appreciate it is impossible to render the vaginal tract sterile by douches, but we are less likely to have a temperature reaction when the radium is in position if the patient has been prepared by preliminary douching. If we introduce radium and keep it in position for a number of days without preliminary douching, we are almost sure to have a temperature rise.

Dr. Schmitz has given a very sympathetic plea for the use of all radiation methods in the war on malignancy. Both radium element and emanation have their fields. It is interesting to note, however, that Regaud, who has at his command one of the largest amounts of radium in the world (9½ grams), gives his preference to radium in element form.

THE MASKED TUBERCLE*

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"Three-fourths of the instances of acute tuberculosis are from an unhealed [active] focus of tuberculous adenitis."—Sir William Osler.

Perhaps it would be well to state at the outset that much of what is to follow is based on the belief that pulmonary tuberculosis—paradoxical though it may seem—is not primarily a disease of the lungs, but is in its earliest manifestations a biochemical complex manifested by dysfunction and recognized clinically, first by symptoms and later by physical signs. If this be true, the following deduction seems logical: one may not find significant manifestations of structural changes in the lungs at the time the patient seeks advice, even though the *symptoms* from which relief is sought are due to an active tuberculous process therein. This is supported by experience. It has been stated that 60 per cent. of the cases of pulmonary tuberculosis are correctly diagnosed for the first time approximately one year before death. Certainly it is true that an astonishingly large number are not diagnosed before they are moderately advanced, and the percentage, as stated, is, I believe, not far from the truth.

No one acquainted with the facts will contend that the fault lies entirely with the patient through his failure to seek timely medical advice. Let us, then, scrutinize our profession and see if we may not find therein some plausible explanation for the conditions just mentioned. For instance, it has seemed to me that one of the regrettable reactions following upon the general acceptance of the classification of pulmonary tuberculosis as formulated by the National Tuberculosis Association, and one not foreseen by its sponsors at the time of its adoption, is that many physicians do not realize that the schema does not include all the forms of intrathoracic tuberculosis—forms closely related to the pulmonary type and having a symptomatology closely simulating it, if, indeed, not identical with it, but in which the physical examination does not reveal the unquestionable involvement of lung parenchyma. The ill-informed may reason somewhat after this fashion:

*Read before the Illinois Tuberculosis Society, Centralia, October 29, 1928.

If the symptoms are due to tuberculosis, the condition must conform to the specifications of one of the divisions of the classification—otherwise tuberculosis is *a priori* eliminated. Of course, the Association has stated that the classification applies only to pulmonary tuberculosis, *i. e.*, to a tuberculosis that gives physical evidence of involvement of pulmonary structures. We err in reading into it something that its sponsors never intended it should include. They, I take it, realize its limitations fully. Moreover, I believe most clinicians will agree that it is as satisfactory as any so far suggested, even though they may not unanimously concede it a full measure of approval. In other words, because of our failure to realize that the classification includes only those tuberculous processes which have produced structural changes in lung tissues, we may not remember that there may be a tuberculous process on the borderline which as yet has not advanced sufficiently to be classified as *Minimal*, and, therefore, not demonstrable by the usual methods of physical examination. In my teaching I have chosen to style this *Pre-minimal Tuberculosis*. This preminimal state is most worthy your intensive, conscientious study, for by its early recognition appropriate treatment may be instituted, the disease arrested, and lesions of the pulmonary parenchyma thereby prevented. That a preminimal condition is clearly recognized by some clinicians is indicated by the introduction of such descriptive terms as “tubercle,” “pretuberculous,” “latent,” “premanifest tuberculosis,” “epituberculous,” or, if you care to, “preminimal tuberculosis.” Whatever the name, the cause is an active tubercle because that symptom-complex is really due to tubercle though its identification is obscure, and its symptoms are not pathognomonic. The disease at this stage is only on the threshold of minimal pulmonary tuberculosis and can not rightly be classified as pulmonary tuberculosis. It is equally erroneous to say it is non-tuberculous.

It will help our understanding of these obscure tuberculous conditions if we look upon tuberculosis in its earliest stages as a systemic, toxic disease in which the foci of activity are by no means always clearly defined or demonstrable.

That the profession is not doing its full duty in recognizing this pre-pulmonary state would seem to be sustained by the observations of Lev-

inson,¹ who states that 7.6 per cent. of the children under twelve years of age in the wards of Cook County Hospital were found to be tuberculous. The actual figures covering the years 1926 and 1927 were: Total number of cases, 1,562, of which 119 were tuberculous. None of these children was hospitalized because of tuberculosis; none was known to be tuberculous at the time of his hospitalization.

It is here relevant to mention that, with rare exceptions, tuberculous infection begins in childhood; that by the eighteenth year about 80 per cent. of those who have lived in intimate contact with open cases of tuberculosis, especially on the maternal side, are tuberculous; that the presence of the tubercle bacillus within the host engenders a resistance sufficient to have a marked inhibitory influence—often sufficient to protect the individual against tuberculous disease. In individuals in whom primary infection is delayed until adult life, the disease is rapidly fatal.

It would seem, therefore, that if we are to have a correct conception of the clinical course of tuberculosis, we must first examine into the phenomena attendant upon the invading tubercle bacillus, and from here follow through until it becomes clearly manifested as tuberculous disease.

Finally, I will repeat what has often been said but is worthy of many repetitions—tuberculosis is usually chronic, is continuous over many years, often punctuated by symptom-free periods, and one may be afflicted with many different intercurrent diseases during its protracted course. Nor is the physician always indifferent to the resentment of his patient against being diagnosed tuberculous, a factor that may have considerable influence in repressing a candid expression of belief. But of this you may be sure—once the lungs are involved, you have entered upon the last chapter of what has been a long story, the only exception, possibly, being the *primary* infection of adult life.

It is convenient to consider the masked tubercle under three heads. Let us call them Types I, II and III.

TYPE I. LATENT GLANDULAR TUBERCULOSIS COMMON IN CHILDHOOD

Although the pathogenesis of tuberculosis cannot be considered as conclusively proven, I be-

1. Archives of Pediatrics, July, 1928.

lieve most of us are inclined to accept Gohn's assertion that the tubercle bacillus invades the lung through the respiratory tract, forms its primary lesion in the parenchyma, and heals. The drainage is through the hilum and to the lymphatic glands adjacent thereto. If the invasion occurs during the first year of life, the infant dies, usually of tuberculous meningitis. If the invasion occurs later, and the bacilli are not too virulent, the dose massive nor too oft repeated, the lesion will be arrested, and the story ended. It would seem, then, that, following this early tragic period, this first year, some change has occurred within the infant's organism which has enabled it to neutralize the virulency of the tuberculous infection, and each succeeding year—or shall we say invasion—carries with it some additional degree of immunization. But if repeated in too rapid succession, or if the bacilli are of too virulent strain, or the dose massive, the individual will not be so fortunate as to completely overcome the destructive influence of the bacilli, and the disease will progress. Its course, it is true, may at times be punctuated with periods of arrest—an arrest which may become permanent, but the observation that less than one in ten of all deaths is caused by tuberculosis, whereas autopsies have revealed that one in five of persons dying from all causes are found to have tuberculous lesions, healed or caseous, calls for more than passing thought. Let us, then, follow these invading parasites to see if we may not find some evidence by which their presence may be suspected with reasonable certainty.

The progressive course of these organisms, pathologists teach us, is *via* the afferent lymph stream, progressing from gland to gland, in which they meet arrest—temporary or complete. The symptoms may be negligible, and there are, of course, no physical signs in the lungs. Potential activity is always present, and the existence of the tubercle can only be surmised. This surmise will justify an affirmation if one can obtain a clear history of contact infection, especially on the maternal side, and if, in addition thereto, tactile examination reveals palpable glands in the axillæ and percussion dullness at the angle of Louis and the area contiguous thereto.

TYPE II. ACTIVE GLANDULAR TUBERCULOSIS

This disease is sequela to the latent form just mentioned and marks the progress of the invasion by a somewhat more definite symptomatology. Tubercles are not manifested by physical signs because the lungs as yet have not become involved. The disease is to be suspected in the presence of contact infection and a symptom-complex of low fatigability. It differs from the preceding form, Type I, in that malnutrition and cough, temperature, malaise, nervous irritability, rise in pulse rate, etc., are present. I would here again emphasize that although it is true that usually a tuberculous child fails to gain in weight, there are, nevertheless, many exceptions in which the disease is quite active and yet the child may be above normal average in weight. Nor should one limit his inquiries concerning contact infection to the immediate members of the family. Extra-familial contacts may reveal the secret—nurses, servants, sweethearts, school associates, visitors, playmates, etc. Contact exposure having been established, the diagnosis will be clinched beyond reasonable doubt if a positive Montoux or von Pirquet reaction is obtained. We do know beyond question that tuberculin excites activity in tuberculous glands, causing a localized inflammation, which is often followed by fibrosis. Indeed, this is the basis of tuberculin therapy, and, furthermore, it is believed that this local inflammation increases the immunizing bodies.

Opie² recently stated that activated glands may be identified on the x-ray plate by the fact of their having lost their clear-cut outline and become granular in appearance at the margins. I understand that the x-ray will not reveal hyperplastic glands unless they have undergone some degree of calcification. This brings us, then, to the consideration that in very early processes in which the glands have not calcified it may not be possible to demonstrate them by roentgenologic methods although, of course, this will not necessarily negate the presence of tuberculous glands as the cause of the symptoms. I believe I am right in asserting that the interpretation of x-ray plates has not been standardized, and I would warn clinicians to accept negative statements with reservations. Before leaving the sub-

2. British Medical Journal, December, 1927, p. 1130.

ject of x-ray diagnosis it is pertinent to remark that I gather from the European literature that physicians there place more reliance on the x-ray findings than our experience in this country seems to justify. Whether this is due to different technic, superiority of apparatus, or to other causes, I do not venture to express an opinion—I leave it as an open question.

TYPE III. THE MASKED TUBERCLE, WITH TRANSIENT DEMONSTRABLE PULMONARY LESION

This is rather an uncommon form but almost every physician working in chest diseases has made record of cases. It usually appears in adolescents. A conclusive family contact history is often hard to obtain. The patient has been in active, vigorous health and good flesh. He gives a history of a cold—not necessarily severe or of long duration. Possibly for a few days he has realized that he has a temperature, and is feeling generally out of sorts. He recovers, but coughs slightly though persistently. In the course of a month or six weeks he notices that, whereas his muscular strength is seemingly undiminished, his endurance is lessened, and his cheeks flush during the mid-afternoon. Physical examination reveals a little moisture in an apex. There is often no temperature at the time of examination, but if taken according to the directions which I shall outline later, under tuberculin diagnostic tests, there will usually be revealed from 0.5 to 1 degree of elevation. The pulse rate holds around 90, even without exertion, and the pulse is usually soft. Inspiratory sounds at the apex are of a moist, bronchovesicular type, often interrupted, and the percussion note over the area involved is low tympanic. True râles may not be demonstrable at this stage. If the patient is given appropriate treatment, his activities curtailed, he will recover in all probability and the underlying cause—tuberculosis—remain unsuspected. This is a truly abortive type of pulmonary tuberculosis which I believe we are justified in classifying as a form of the masked tubercle because of its lack of frank tuberculous demonstration and because it does not come clearly within the classification of *Minimal*, although the lung structure is involved.

Chronologically, then, we recognize the masked tubercle in the following progressive stages:

Type I, Latent Glandular Tuberculosis.—No symptoms; no physical signs. This condition

may be surmised but cannot be proven at this stage; it should be assumed when contact with an open case is known and the tuberculin test is positive. It is the precursor of active tuberculosis, *i. e.*, of active glandular tuberculosis.

Type II, Second Stage of the Masked Tubercle.—Symptoms of glandular activity not pathognomonic; manifested as a systemic dysfunction. The presence of the tubercle may be proven by the tuberculin reaction and if supported by a confirmatory history of exposure to infection, a diagnosis of active masked tubercle is justified. There are no physical signs indicating involvement of pulmonary parenchyma. Symptoms conform to those of tuberculous toxicity.

Type III, Third Stage of the Masked Tubercle, with Transient Demonstrable Pulmonary Lesion.—Here the process has progressed to the point where pathological changes in the apex of the lung are revealed by the physical signs previously mentioned. This type is abortive.

The length of this paper does not permit me to go into the detailed methods of diagnosis; they are, moreover, readily available in standard texts. My purpose is, rather, to point out that much of tuberculosis is going unrecognized until the pulmonary symptoms have become well advanced and the patient's chance of recovery proportionately reduced. It is an axiom in tuberculosis therapy that the earlier the diagnosis and the earlier the institution of curative measures, the greater the likelihood of arrest and cure. This is a fact that every physician should know and heed; it is the main purpose of this discourse. A practice devoted almost exclusively to the study of tuberculosis in sanatoria, in clinics, in general hospitals, and in private office has enabled me to make my deductions and formulate my opinions in regard to the therapeutic, the sociological, the economic, and the familial aspects of this disease, and I say with confidence born of conviction that if we would give to this problem the study which its importance warrants, and imbue our patients with the hopefulness which experience justifies, we would not only ease amenable to treatment, but also reap a reward commensurate with our best efforts and most intensive study. We would not then so often witness that deplorable spectacle of the disorganization of the natural family relations, because some unfortunate member has been per-

suaded to enter an institution and thereby assume an expense which all too often can be met only by great financial sacrifice and the lowering of those standards of living in which, because of circumstances of birth, association, education, social or cultural attainment, they rightly count their due.

Considering the indefiniteness of diagnostic criteria, it is quite understandable that the masked tubercle often perplexes the most astute diagnostician, and is oftentimes the cause of honest differences of opinion between physicians equally eminent and whose opinions are equally worthy of respect. Patience and tolerance would always temper our judgment if we would only realize that the secret lies hidden for the present within the lymph node, and the disease is suspected chiefly from the effects of the biochemical products which are poured into the lymph stream, and that the patient's symptoms are the chief evidence upon which opinion rests. The more complete picture must be inferred and correct inference will depend upon the logical deductions of the attending physician. Considerable importance should be attached to the fact that 80 per cent. of patients suffering from tuberculosis have a history of prolonged intimate contact with open tuberculosis. Especially is this true if the symptoms are sequelæ to measles.

There are five conditions with a toxic symptom-complex closely resembling that of the active masked tubercle, and the correct diagnosis of which is of sufficient importance to demand special mention. I will give only a passing word to post-influenzal catarrhal inflammations of the respiratory tract and non-tuberculous infections of the head, neck, and mediastinum. Search these fields for concealed foci of infection. Examine the heart carefully for evidence of mitral stenosis—much more common than it is generally thought to be. Look for a bulging or prominence of the ribs over the heart. In the early stages there is often no murmur. Be suspicious of an over-sharp first sound, frequent attacks of tachycardia, and a presystolic roughening felt in the region of the apex and ending sharply with the apex beat (preceding often by years the valvular murmur), and possibly a slight dyspnea on exertion—more than that of the average person under a like stress. The murmur may be brought out by having the pa-

tient hop (*both feet leaving the floor simultaneously*) twenty-five to fifty times. By laying the patient on his back a murmur which was scarcely heard in the upright position may become clearly audible. Both murmur and roughening may disappear for days. If possible, place your patient under the fluoroscopic screen so that the lateral posterior aspect of the base of the heart is brought into view, when a succession of wave-like contractile impulses can often be detected passing from above downward toward the ventricles. Similar impulses may be seen in hyperthyroidism. Inasmuch as mitral stenosis often produces catarrhal symptoms of the respiratory tract, such as cough, râles, and intrathoracic distress, we can readily understand that the mistaken diagnosis of pulmonary tuberculosis may be made. Pyelitis not infrequently complicates the picture—especially is this true in children. An examination of the urine, taking due precautions against extraneous contamination, should dispel doubt.

And last but equally important are those instances of hyperthyroidism in which, no enlargement of the gland being demonstrable, we overlook the fact that it may, nevertheless, be hyperfunctioning. However, in preminimal tuberculosis there is little or no departure from normal in the metabolic rate; the pulse rate is seldom more than 90 to 100; the temperature varies between normal and $99\frac{1}{2}$; the patient usually (there are exceptions to this) gains in weight if put to bed and his appetite maintained, and there is no marked spread between the systolic and diastolic pressures. The pulse is soft, the eyes are gentle, and there is an entire absence of stare or fixed look in the gaze, even though the eyes may be bright. The patient tires easily and lacks endurance. Tremor is rare in tuberculosis, and the movements requiring the co-ordination of small muscles are deliberate and without undue effort of control. However, pulmonary tuberculosis and hyperthyroidism and mitral stenosis may co-exist.

I have made frequent references to the use of tuberculin as a diagnostic agent; perhaps in closing it would be well to give the technic as we practice it.

The three most generally practiced are the subcutaneous, the intracutaneous or Montoux, and the von Pirquet. The only difference be-

tween the latter two is that the tuberculin in the former is placed into the skin by means of the hypodermic needle, whereas the von Pirquet is by scarification. I will say, however, that I have secured a positive Montoux on patients on whom the von Pirquet has been negative.

All the tuberculin tests are closely related—are, indeed, fundamentally the same in that tuberculin is used in all instances to prove the presence or absence of tuberculosis infection. They differ in the technic necessary to produce their respective reactions and in the reaction characteristic of each.

In the subcutaneous test the method used is about as follows: First, the patient is taught to take his temperature and read his thermometer. He is told that he should remain in a comfortably warm room for at least half an hour before proceeding with the test—that it takes about that long to warm his mouth, if he has been breathing the cold air of outdoors for a considerable time. The thermometer must be well buried in the mouth for at least five minutes *by the watch*. During that period he must not speak, but keep his lips tightly closed. At the expiration of the allotted time the temperature is recorded and the mercury shaken down to normal. In two hours the process is repeated. This continues throughout the waking hours, from 8 A. M. to 9 or 10 P. M. On days of even calendar date the readings are made on the even hours and on odd calendar days on the odd hours, extending over a period of about six to ten days.

You are now ready to proceed to the next step, which is the preparation of your tuberculin dilution for diagnostic purposes. Take 0.1 c.c. of old tuberculin Koch and add 9.9 c.c. of normal saline solution. This makes a dilution of 1 in 100 and 0.1 c.c. equals 1 milligram of tuberculin. Diagnostic dosage varies from 2 to 8 milligrams and is dependent upon the age and vigor of the patient, the smaller doses for the less vigorous. Koch established a maximum of 10 milligrams.

The technic of administration in the subcutaneous method is that of a simple hypodermic injection, but convenience and accuracy are enhanced by using a tuberculin syringe. In the Montoux method the injection is made into—not through—the skin (intracutaneous).

The reaction becomes manifest in from 8 to

48 hours, and may be described as (a) local, (b) focal, (c) general, or (d) negative.

The *local reaction* consists of nothing more than a mild inflammatory reaction at the site of injection.

The *focal reaction* consists of an area of inflammation at the site of the infection. There may be localized soreness over the chest or a sense of constriction: some fugitive localized râles may appear where they formerly were not, or a low tympanitic note not noticed before the injection was given. As is well known there may be an increase in density of the shadows about the foci, demonstrable on the x-ray plate.

The *general reaction* is characterized by a sudden rise of temperature above the mean established by the two-hour readings, chills or chilly feeling, malaise, headache, muscular soreness, and a quickened pulse. A severe reaction may even necessitate a day or two in bed. These symptoms quickly subside and the condition returns to that existing prior to the injection.

In interpretation I would stress this caution: Your patient may be tuberculous and yet not react to tuberculin if antibodies are not present—said to be a bad prognostic sign. The absence of antibodies may be temporary, hence the advisability of repeating the test several times—and with increasing dosage—before drawing final and negative conclusions.

The von Pirquet test is more especially suited for children. Use old tuberculin of Koch, undiluted. Cleanse and scarify the skin in two places. The scarification should be just deep enough to penetrate the epithelial layer, as in vaccination for smallpox. Place one drop of tuberculin on a scarified area; leave the other clean to serve as a control. A positive reaction is indicated by a localized hyperemia at the site of inoculation.

From what has been said the following conclusions are submitted for consideration:

The masked tubercle represents a glandular tuberculosis, which is not necessarily confirmed by physical signs but should be suspected from clinical symptoms.

If these symptoms appear in a subject who has been exposed to prolonged and intimate contact, your surmise that they are due to an active tuberculous process will be right four times out of five. Obscurity of diagnosis may be clarified by tuberculin inoculations.

The prevention of pulmonary tuberculosis rests upon the recognition of this preminimal state and the institution of proper treatment to bring about its arrest and cure.

Before fixing upon the diagnosis of masked tubercle the following differentiation should be made: Post-influenzal catarrhal infections of the respiratory tract; focal infections of the head, neck, and mediastinum; mitral stenosis; pyelitis, and hyperthyroidism.

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THE PLACE OF THE PRACTICING PHYSICIAN IN SCHOOL HYGIENE*

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I do not intend to discuss the place which the practicing physician does occupy, but I wish to give as concisely as possible this afternoon the place which I think the practicing physician could occupy in a School Health Program. I am assuming that such a program is a definite need of the schools, that the health of the school children as a group concerns the community very vitally; first, because a group of individuals always constitutes a Public Health Problem; secondly, the community supports at a tremendous expenditure of money, time, and effort its public schools whose objective is the education of the child. This objective may be attained only by the physically healthy child. The cost of absenteeism, the financial drain of repeaters due to physically handicapped condition substantiate this statement. As a citizen, interested in community problems, administration taxes, etc., the physician must be concerned with the health of the school child.

I am assuming that the physician has a particular interest in every school problem that has a medical aspect and that the school has need of the physician in all its problems which present a medical aspect. As a member of the medical profession, the physician has definite rights in the School Health Program and definite duties and responsibilities. Surgeon General Cummings says, "The very fact that we are doctors, that we are so licensed by the state places us out of the rank of ordinary citizens, gives us

privileges and imposes upon us definite responsibilities."

Assuming then that the schools are definitely hindered in attaining their objective, the education of the child, by medical problems and that the physician both as a citizen and as a member of his profession is interested in these problems, I wish to state briefly a few of these problems and to suggest how the physician may aid in overcoming them. These problems have been stated many times and suggestions have been offered for their solution. The repetition is justified by the continued existence of the problems.

The schools are faced constantly with the problem of contagion—communicable diseases and such disorders as impetigo, scabies, ringworm and pediculosis. The communicable diseases such as diphtheria, scarlet fever, etc., may be followed by mortality or by a morbidity which leaves the child permanently handicapped—notably by the heart disorder of diphtheria and the nephritis of scarlet fever. These diseases in epidemic form may disorganize a school for months due to absenteeism involving great loss of time and money and necessitating frequent repetition of work. Each school should be protected by some definite workable plan in the control of contagion. The question of impetigo, scabies, etc., is usually one of personal hygiene and is often associated with other problems of personal hygiene, which are school problems in so far as they affect the welfare of those about them. Some children are sent to school in such a filthy condition and smelling so offensively that no teacher should be expected to put up with it. The inertia of the mother who says "Johnny is no rose, teach him, don't smell him" must be overcome.

A second big problem is that of the school building itself which may be hazardous to the health of the school child. The safety and health of the school child may be jeopardized by inadequate fire protection, improper heating facilities, illumination and ventilation, insufficient toilet facilities, soap and water for washing the hands. Even the drinking water may not be safe. Each of these subjects is a topic in itself and the knowledge of them far outdistances the use to which the knowledge is put. With this problem too, may be considered that of the hygiene of instruction which has a direct bear-

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, Peoria, May 21, 1929.

ing on the health of the child. In this is concerned the length of the school day, the need (or not) of recesses, the length of the noon hour, the school lunch, the arrangement of the subjects during the day and amount of time for each. Too often these are arranged to suit the convenience, the preferences, or the needs of the teachers.

And the last big problem is the health of the individual child. I am not saying this is a problem the school has to solve, but I am saying that it is a problem that the school has to face. To realize how far below the ideal of physical health many children fall one needs but to read the records of school examinations of thousands of children—the numbers who are far below average weight due to improper diet, faulty health habits or uncorrected remediable defects; the numbers with defective vision, eye strain or strabismus who go from year to year with no relief or correction; the acute and chronic running ears which are receiving no medical attention and may never have received any; cases in which hearing is becoming progressively diminished and nothing is being done to check it, no effort is made to learn the cause which may be only a plug of wax or a foreign body; the numbers with infected tonsils or obstructive tonsils and adenoids who are almost invalided by them. Dental surveys reveal the appalling conditions which are found in the mouths of many little ones—decaying, broken teeth, often rotten shells—inflamed, ulcerating infected gums, foul breath odor, nauseating to those close by. In some schools over ninety per cent of children have been found in need of dental care. Children suffering from chronic bronchitis or repeated attacks of acute bronchitis are found in nearly every school. Even cardiac cases go year after year to school with no medical supervision whatever. Faulty posture and pronated feet are so common that one wonders at times if they must not be the normal and the examiner's standards too high.

Such then are the health problems of school life and the solution of them lies in educational, preventive and corrective measures. The school must or at least should look to the medical profession for direction, and the success of any program depends upon the mutual co-operation which exists between the school and the medical profession.

It is recognized that much ill health is a result of faulty living and that it may be avoided by correct habits of living. This recognition has led to the great interest in a Health Educational Program in the schools; a program which will impress upon the child the right habits of living—mental and physical; a program which keeps before the child the ideal of mental and physical health and stresses health as one of the great objectives of education. A program of Health Education must be based upon actual needs and not upon general theories. Educators and physicians saw clearly the need of keeping instruction within the bounds of scientific knowledge. The little knowledge of an enthusiast was likely to be a dangerous thing. Accordingly in 1924, the Joint Committee on Health Problems of the National Educational Association and the American Medical Association formulated a Health Educational Program for the schools. Their report is in book form under the title Health Education and gives authoritatively and clearly the fundamentals that must be the basis of any School Health Program. The subject-matter is the contribution of the physician—the ways of presenting the subject are left to the educator. As in all other branches of education, the ability of the teacher and the interest of the pupil determine the ultimate good derived. In this field there is little work asked of the practicing physician but he may render service as advisor to the school board in these matters.

The application of preventive measures to the school health problem was first made in the attempt to control the spread of contagion in the schools. Communicable diseases may appear suddenly in a school and may run through it, disorganizing school work and leaving permanently physically handicapped children. The physician has a definite role in the prevention of such an outbreak—the responsibility is surely a medical one and warrants the use of all means of controlling contagion. Every community can have some definite plan, formulated by the physicians, a plan which takes into account all approved methods of control and which is workable. I might suggest a simple plan.

First—*Immunization*. The value of immunizing against smallpox and diphtheria (I might include scarlet fever) is known. The community then should be encouraged by its physicians to take advantage of these means of protection,

especially in the younger children to whom the diseases are so often fatal. Immunization should not be the foot ball it so frequently is between interested lay organizations and disinterested medical men. The physicians of each community should decide for themselves whether the work shall be done individually or in groups. There is no doubt that it is the group immunization that reaches the masses.

Second—Control of Cases. Contagious diseases are most effectively controlled by the use of quarantine measures. Most State Boards of Health have minimum requirements which are binding on the separate communities. All cases of contagious diseases should be made to observe quarantine. Often the physician has to be his own health officer if there is no Public Health Officer. Unless quarantine is observed, it is very difficult to prevent an epidemic. It is not uncommon for people to deliberately conceal a case of smallpox in order to avoid quarantine.

The school should be notified of all contagious cases if it is to adequately protect the children in its care. It would be helpful if the physician would notify the principal of a case of contagious disease where there is no Health Officer. It is necessary, too, to report all known "contacts" so that the school may do its part in enforcing quarantine and in excluding such contacts from school. It is in the reporting of contact cases that most communities fall short. In a recent report of the Chicago Department of Health it is stated that not 25% of the contact cases are reported and that only a very small percentage of these receive prophylactic immunization.

In a community which has school medical supervision, the cooperation between the family physician and the school medical staff is the most effective means of controlling contagion. The school will exclude every child who returns without a certificate from his physician, stating that the quarantine period is up and that the child is in a condition to return to school.

This plan for the control of contagion in the schools is workable in any community and is effective only to the extent that it is followed—judged by the number of immunized children, the number of contact cases reported, and the observance of quarantine cases by the diseased cases and contacts.

There are other forms of contagion, very distressing to teachers and children which the

physician may help to control—such as impetigo, scabies, pediculosis. For example, if a child has scabies, it is not sufficient to instruct the mother in the care of the particular child, but she should be informed of the contagious nature of scabies and of the necessity of preventing further spread in her own home and in school.

The second school health problem is in the school itself—in the building equipment and in the character of the instruction. That same Joint Committee of the National Educational Association and American Medical Association which was mentioned in relation to the School Health Program has given much time and effort to this phase of the problem. Its first report on the "Minimum Health Requirements for Rural Schools" has led in many states to legislation which requires the approval of the plans and the location by a competent State Official or Board before a school board may erect a school house. Naturally, few physicians are or have time to be in immediate touch with this problem. But it is very simple for them as interested citizens of a community to require that the buildings, etc., reach at least minimum standards of safety, heating, ventilation, illumination, drinking facilities, etc. If the physician is willing to serve the school board in an advisory capacity, he can render valuable service. School life we know puts a strain on the health of the child, so the length of day, length of class period, recesses, etc., should be such that the child suffers the least possible strain.

The third and biggest health problem that presents itself to the school is that of the physically and mentally handicapped child. The health of the child and the care of the child have always been looked upon as parental responsibilities and the school has attempted to teach whatever was sent to it in the appearance of a child over six years of age. The emphasis of school educational objectives has changed, however, and the health of the child is considered now the first educational objective. This change of emphasis was very largely due to the appalling physical condition of the World War Recruits with their incredible number of remediable but uncorrected defects and faulty habits of living, revealed in the army reports. The school still recognizes the parental responsibility for the health of the child, but it now recognizes too its own right to insist that any child be in the best

mental and physical condition possible for that individual child. Toward this end the school is constantly striving—parental inertia renders progress slow—but without a doubt, there is progress. The aim is right and should not be abandoned.

One need not ask what the role of the practicing physician is in regard to the physically and mentally handicapped child. It is to him only that the parent should look for guidance—the correction of remediable defects, and advice regarding habits of living, training, etc. That would be the ideal situation and there would be no need for anything else if the ideal situation existed; i. e., all children in need of medical attention are getting it. Several factors militate against the achievement of this ideal. To mention a few—1. Parental inertia and indifference—poor home care and training; 2. Parental ignorance of the condition or failure to recognize the importance of the physical or mental handicaps; 3. Poverty with absolute inability to pay for the necessary care, in which case they do not seek it.

And it is to locate and overcome these obstacles to the normal health of the child that school health supervision has been undertaken. The work of the School Medical Staff does not, at least should not, infringe upon the rights of the practicing physician and does not invade private practice as it is sometimes accused of doing by some who make no effort to acquaint themselves with the aims of school health supervision. The work of the school physician and the follow-up work of the nurse accomplish very little if they do not have the whole-hearted support of the practicing physician. I am assuming that the school physician is well trained and one whose judgment and ethics may be respected.

The chief duty of the school physician is in finding the physical handicaps to normal health. He sees vast numbers of children who would otherwise not be seen by a physician. He records findings; frequently does not interpret them. If the child is receiving medical attention, that fact is noted on the card. If no effort toward correction is being made, the family is urged to consult a physician regarding the defect. It is at this point that the obstacles referred to above have to be overcome. And difficulties would be fewer if a friendlier spirit of cooperation existed between the School Medical Staff and the family

physician. The local physician need not agree with the school findings, but he should certainly extend the same courtesy to the school physician that he would extend to another physician. The relationship might be such that each could freely consult the other. I am sure that the school physician can offer at times valuable information which he has acquired from the teacher or from the neighbors. It is possibly too much to ask a physician to notify the school that medical care has been given a child, but it would be helpful.

Where a nurse is in charge of school health supervision, she has to rely on her own judgment in regard to the physical defects to be reported. In most cases her efforts are well directed, certainly well-meant, and the physician should not condemn her unreservedly for some error of judgment. The child has benefited where there has been mutual cooperation.

Many communities have no school health supervision and here the schools look to the physicians for direct assistance in school health problems. The physicians interested in the care of children can adopt "Minimum Standards of Child Health" as physicians in Virginia have done and through educative measures encourage all mothers to reach the standards, so that every child reaches the highest level of physical health of which it is capable. The School Health Program can emphasize this need.

In conclusion I wish to mention a few of the outstanding contributions to medical knowledge which school health work has made and by which the physician may profit. 1. The value of toxin-antitoxin in the control of diphtheria has been established from the data collected in the immunization of thousands of school children. 2. Dr. Kaiser, from a survey of the Rochester, New York, schools, has shown the relationship of the tonsil to the onset and recurrence of acute rheumatic fever. 3. The weighing and measuring of school children have revealed alarming numbers and degrees of malnutrition. 4. Extensive dental surveys have shown dire need of dental attention in most communities. Some communities had need of attention in as high as 98% of its children. 5. And lastly, the permanently physically handicapped child can be salvaged by education and therapy combined. We have seen the establishment and growth of schools for such children to which the paralyzed, the blind, the feeble-

minded, etc., are being brought in constantly increasing numbers.

We have seen then that the school has great need of the practicing physician and that he in turn can derive benefit in his work from many things that the school has to offer.

THE PATHOLOGY OF HERNIA FOLLOWING CATARACT OPERATION*

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In a brief review of the senile changes which take place in the tissues involved in a cataract operation, we note that the cornea becomes less refractive and slightly cloudy with deposits of cholestrin and other lyphoids.¹ The sclera becomes thickened and fatty degeneration takes place throughout.² The sclera and cornea being non-vascular structures do not suffer active inflammatory changes so characteristic of vascular tissue.³ Traumatic and toxic inflammation are common in the iris, certain forms of cystic degeneration take place.⁴ And cell death in the pigment granules results in deposit of pigment over the endothelial lining of the anterior chamber.⁵ Aseptic wounds in the iris show no tendency to granulation of tissue or scar formation.⁶

Proteins in the anterior chamber produce certain inflammations.⁷ In cases of sudden loss of the aqueous humor the anterior chamber is quickly filled with lymph which is rich with proteins and other irritating substances which are not normally found in the aqueous humor.⁸

This iris, being disc-shaped, is very easily misplaced and moves by the slightest pressure made on its surface. An incision in the conjunctiva is followed within the first 24 hours by a marked dilation of the blood-vessels and an

exudate filled with polymorphonuclear leucocytes; when healing takes place there is a rapid proliferation of epithelial tissue which fills all spaces opened to its invasion. If for any reason the wound suffers delayed healing, there takes place a proliferation of epithelial cells into the wound which, if extensive, may interfere with proper healing of the sclera.⁹

In the foregoing paragraphs, an attempt has been made to review the pathologic and senile changes to which each structure is subject, all of which may, at times, be involved as factors in the causation of delayed healing. separation of a wound, or hernia formation following cataract extraction.

The healing of a cataract incision depends upon several factors: First, the health of the tissue involved; second, the adaptation of the wound edges; third, the influence of muscular actions upon the eye which may tend to separate the edges of the incision, such as a movement of the lids, or ocular muscles, particularly the superior rectus and the ciliary muscles. Formerly most cataract operators preferred to make their incisions wholly within the cornea. This provided poor support to the wound edges, which were easily separated and iris incarceration or hernias were more common than today.

The structures which may be caught into the wound during, or following, a cataract operation are the iris, the vitreous, the lens capsule and the ciliary body. The iris is most often lodged in the wound alone, or with the vitreous. If the capsule or ciliary body is caught between the edges of the incision, the iris is almost always carried with them. These structures become involved in the incision either during the operation or shortly after. If during the operation, they may be often times freed by means of the spatula or spoon, or by gentle massage over the incision and, if successfully freed, may remain free during the process of healing; or they may reattach themselves later, due to a reopening of the wound with some leakage of the aqueous; or less commonly, due to an inflammation of the parts involved.¹⁰

*Read at Annual Meeting of Illinois State Medical Society, at Peoria, May 22, 1929.

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An iris prolapsed in the wound during operation always has a greater tendency either to re-attach itself to the wound, or to become incar-

closure of the sinus of the anterior chamber at this point. This usually causes no further trouble, or may later result in glaucoma, or in-

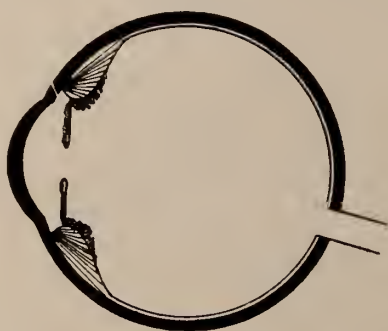


Fig. 1—Cataract removed. Eye otherwise normal. incarcerated later than an iris which has never been pulled into the wound.¹¹

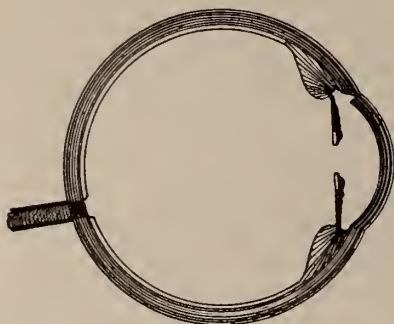


Fig. 2—Gap produced by action of ciliary muscle.

The implication of the iris with the wound may be classed in three groups; in the first group the iris is adherent to the wound but is not

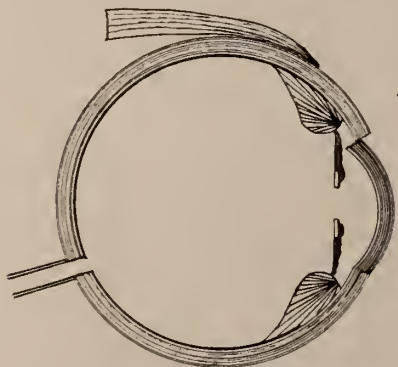


Fig. 3—Edges of wound misplaced due to action of superior rectus muscle.

caught in its edges; it is held there by an exudate of fibrin and leucocytes which result in the

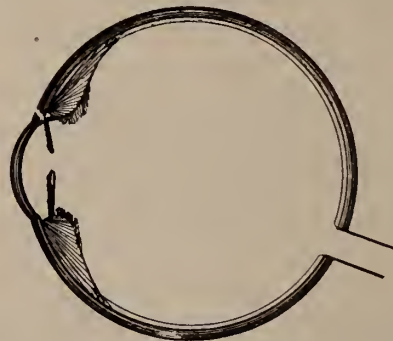


Fig. 4—Adhesion of iris to wound.

flammation which may recur or result in uveitis, or even panophthalmitis. When the iris lies in contact with the wound for a short time, a fibrous exudate is thrown out which connects it and causes adhesions of a permanent nature.¹²

In the second group the iris is caught or incarcerated between the edges of the wound. It may extend completely through all the cut layers, but usually, however, it is caught only in the posterior layers of the incised tissue since in most cases of complete incarceration the struc-

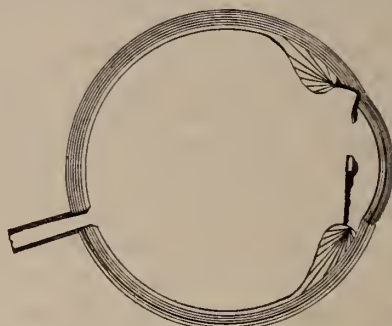


Fig. 5—Iris caught in gap produced by action of ciliary muscle.

ture becomes herniated and belongs to the third group. The action of the ciliary body may have something to do with the formation. Its action in pulling on the scleral spur draws the deeper layers of the sclera backward allowing the iris to protrude partly into the sclera. When this occurs, a bulging scar results. The superficial layers of the tunica fibrosa are united and a permanent gap results in the posterior layers which is lined with the iris and may contain vitreous or lens capsule or both. The iris stroma

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proper atropies and the pigment layer remains. This produces a weak spot in the sclera which may spread more or less, depending upon the interocular tension, but which never results in the re-opening of the wound. Various degrees

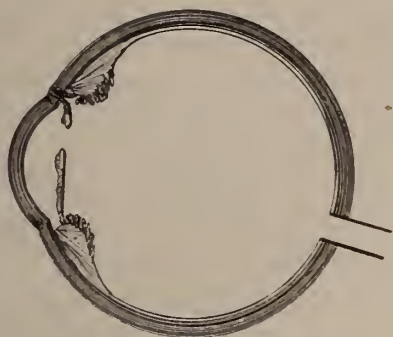


Fig. 6—Complete incarceration of iris.

of astigmatism may result from this complication, or inflammation of various degrees, up to a severe uveitis or even panophthalmitis.



Fig. 7—Complete hernia of iris.

The third group involves the more complicated cases of hernia formation. This usually follows when the iris is completely prolapsed through



Fig. 8—Gap filled with proliferated epithelial cells.

the wound, due, especially, to a separation of the wound edges either by muscle action or internal pressure. These cases are the most damaging type. Here astigmatism is most ex-

treme, running sometimes as high as 11 diopter in my experience and perhaps even higher in other reported cases. The hernia, usually consisting of the iris and vitreous and in many cases lens capsule, is often covered only with con-

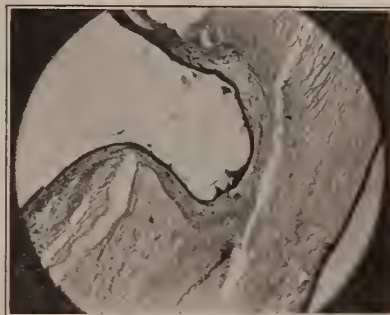


Fig. 9—Large gap in the sclera lined with the iris.

junctiva or it may protrude through the cut edges of conjunctiva, its further progress being halted only by the pressure of the upper lid. Later these hernias are covered by the proliferat-

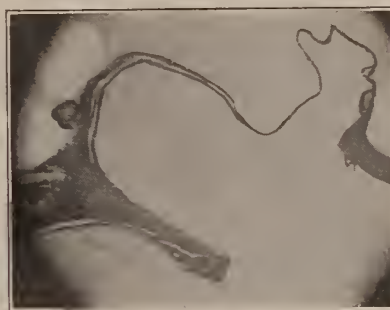


Fig. 10—Complete hernia of iris and vitreous.

ing epithelial cells of the conjunctiva.

If no attempt at repair is made, the hernia either remains in a stationary condition, or may

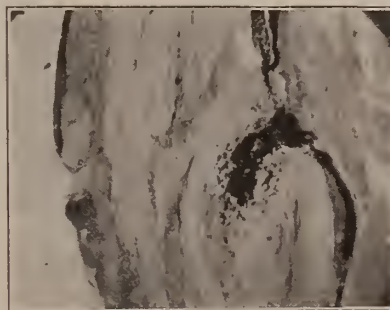


Fig. 11—Iris pigment in wound.

become so large that the lid cannot close over it; or it may become smaller due to the con-

striction of the scar tissue. Recurrent inflammations are quite common, and may go to any or all stages even to the total loss of the eye.

The writer made a study of prolapses following the various forms of incision in a series of over 1,300 cases, operated on during a period of six weeks in Dr. Holland's clinic in Shikarpur, India, in 1927, with the following conclusions: The corneal incision is followed by more prolapses and hernia than the incision made in the limbus or sclera, and the use of the conjunctival flap tends further to lessen the percentages of prolapses.

A DISCUSSION OF GRADENIGO'S SYNDROME*

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JOLIET, ILL.

A discussion of Gradenigo's syndrome is necessarily a discussion of otitis media because otitis media is the pathological condition which directly or indirectly produces the two secondary conditions: abducens paralysis and fifth nerve irritation, which complete the picture. It is my intention merely to touch upon a few of the interesting points in the etiology and prognosis.

A patient with Gradenigo's syndrome has two significant complaints: diplopia and severe unilateral headache in the fronto-parietal region. The diplopia is due to a paralytic internal squint resulting from paralysis or paresis of the abducens nerve on the same side as the otitis media. The headache is due to irritation of the fifth nerve, gasserian ganglion on the same side.

How does otitis media do these two things, paralyze the sixth and irritate the fifth nerve and where does it do it?

A good many theories have been advanced. Some say it is a toxic process; others, a reflex process. Others explain it on a mechanical basis and the latter certainly seems much more likely.

Where is the sixth nerve paralyzed and the fifth irritated? It seems logical to assume this occurs where they are near together and where they are not closely accompanied by the other cranial nerves or we would have them involved also. It is also logical to suppose that the sixth nerve is much more likely to be paralyzed where it is in closely confined walls of a more or less

rigid nature where slight swelling will produce pressure.

These conditions are fulfilled in the region of Dorello's canal, which is the space between the apex of the petrous portion of the temporal and the lateral wall of the body of the sphenoid. This space is roofed over by the dense, resistant petro-sphenoid ligament extending from the posterior clinoid process of the sphenoid to the sphenoidal spine of the temporal bone.

Dorello's canal is occupied by the sixth nerve and the inferior petrosal sinus. At the anterior end of the canal the nerve lies just lateral to and slightly above the sinus and lateral to the nerve and slightly above is the superior petrosal sinus. At this point it lies between two venous sinuses and very near by is the gasserian ganglion separated from the sixth nerve only by the superior petrosal sinus.

Thus we have first, the sixth nerve running for a short distance through a canal with rigid walls accompanied by the inferior petrosal sinus. Anteriorly as it emerges from this canal the nerve comes in close proximity to the gasserian ganglion and superior petrosal sinus.

One of the best discussions of the etiological process is an article by Charles E. Perkins written in 1910, in which he collects 95 cases reported up to that time.

In thirty-three cases the cause of the abducens paralysis was ascertained with reasonable certainty to be sinus thrombosis, two; meningitis, three; labyrinth disease, four; abscess in posterior fossa, nine; in middle fossa, two; osteitis of petrous tip, thirteen.

It can be seen from the foregoing that he does not attempt to ascribe the cause to any one process but recognizes a multitude of ways in which otitis media may lead to sixth nerve paralysis.

A sinus thrombosis produces oftentimes inflammation of the sinus walls and consequent swelling. In those cases in which the thrombus extends to the petrosal sinuses pressure on the sixth nerve is likely to occur as well as irritation of the gasserian ganglion.

Meningitis may, of course, involve the meninges over this region as well as any other.

Extra dural abscess extending deeply will cause edema and swelling of the dura beyond the limits of the abscess and may cause pressure even where the abscess does not produce it directly.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

Osteitis of the petrous tip: In very pneumatic temporal bones various cellular connections extend deeply into the petrous tip and it is in this type we have extension directly through the bone to the tip producing osteitis in this region.

From the foregoing it is seen there are various ways in which otitis media may produce the symptoms under discussion.

In regard to prognosis in Gradenigo's syndrome we know that these cases vary tremendously in their general prostration and seriousness just as do other cases of otitis media. It would seem that the prognosis depends not so much on the presence of Gradenigo's syndrome but on the way it is produced.

If produced by the process of meningitis it is bad; if produced by sinus thrombosis it is unfavorable; by extradural abscess, if the abscess is evacuated, it is reasonably good. If produced by extension of the disease through cellular connections to the petrous tip, it is generally good. If produced by brain abscess, it is unfavorable. There are other routes which the inflammation might take to reach the area under discussion; but it would take too long to discuss many of them. The above is sufficient to show some of the possibilities and also to illustrate that the prognosis is favorable or unfavorable not because there is a Gradenigo's syndrome, but because the syndrome is produced by a relatively mild complication of otitis media or by a very severe one.

I have seen four patients with Gradenigo's syndrome, three in our own practice and one on Dr. Schoolman's service at the Eye and Ear Infirmary. Three of these recovered and one died of meningitis.

Our most recent case occurred in a girl of 12 years who was taken sick with ear ache the first week in January. They had no physician for four weeks and the child had some headache, fever, and pain in the ear at varying intervals during that time. Five weeks after the onset she began to see double. Two days later examination revealed an acute otitis media left with Gradenigo's syndrome. X-ray showed a cloudy mastoid. Immediate operation was done and the typical findings of an acute mastoiditis disclosed in a temporal bone of good cellular development. Two days after the operation, the diplopia was gone and the eyes appeared normal. She went on to an uneventful recovery.

DISCUSSION

Dr. H. L. Ford, Champaign: It has been my privilege to see three cases, two at the County Hospital and one in private practice, and I feel it is not always a meningitis that causes it, although most of the text-books classify it as due etiologically to localized meningitis. It seems to me that it must be due to pressure, as well as to meningitis, from involvement of the mastoid cells in this region.

Dr. George W. Boot, Chicago: These cases of paralysis of the sixth nerve are decidedly interesting. One case I saw, a boy of ten, had struck the right mastoid against a railroad tie, and had paralysis of the sixth nerve and a herpes under the eye. Another case was a woman who had been struck by an automobile, who had paralysis of both sixth nerves and hemorrhage in the floor of the fourth ventricle at a point where the nuclei of the sixth nerves are in close contact. Another boy of fourteen had paralysis of both sixth nerves and paralysis of the fifth nerve so that he could not move the eyes upward. After evacuation of a brain abscess he recovered.

Dr. M. H. Cottle, Chicago: I examined postmortem this year a case of Gradenigo's syndrome which showed a well developed normal pneumatic mastoid which had a continuation of the antrum, opening directly into the floor of the middle fossa. At the tip of the apex of the bone there was an abscess of the dura, which had probably been present for the three months duration of the disease. The ear drum was normal. There was a paralysis of the facial and severe pain along the nerve.

Dr. George Woodruff, Joliet (closing): I have been much surprised to note how little mention is made of this condition in the literature. Some of the standard text-books do not mention it at all. I have not examined all of them. There are quite a few cases where this syndrome did not appear until a month after the onset of the disease, or until after operation, and yet a good many went on to recovery without any surgical intervention.

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THE X-RAY IN THE DIFFERENTIAL DIAGNOSIS OF BILE TRACT DISEASE*

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The roentgenological examination is diagnostic in itself for a large number of diseases.

*Read before the North Side Branch of Chicago Medical Society February 2, 1928, and Wayne County Medical Society, March 26, 1928, Richmond, Indiana.

Occasionally it is impossible to make a definite diagnosis, nevertheless the x-ray examination does show the presence of a lesion, and directs the clinician's attention to it. The fluoroscopic screen examination is of the utmost importance in eliciting a differential diagnosis of bile tract disease. A careful correlation of the x-ray findings with both the clinical history and the physical and laboratory data usually makes a diagnosis possible. The clinical picture of bile tract disease may be produced by many pathological entities. MacCarty¹ called attention to the fact that: "The gall bladder, liver, duodenum, stomach and pancreas are embryologically, anatomically, physiologically and pathologically closely related." It is therefore logical to suppose that the clinical picture may be likewise. Only the more common lesions simulating bile tract disease will be considered.

The advent of cholecystography has undoubtedly established one of the most valuable contributions to the sum of our diagnostic methods in the study of gall bladder disease. Due to the toxicity of the drug and the rigid technique required, many clinicians have discarded the intravenous method of administration of the dye, tetraiodophenolphthalein, as described by Graham and Cole, preferring the oral route instead. With the exception of approximately two per cent. of the cases the oral method of cholecystography is very reliable.

The oral administration of the dye is contraindicated in obstruction at the outlet of the stomach, in hyperemesis, in advanced cirrhosis of the liver, and in obstruction of the common duct.

The oral method introduces no element of doubt in the diagnosis when the patient is under definite control, when all factors are taken into consideration and the technique and management are exacting.

Although a roentgenological examination of the liver is not often requested by clinicians, very useful information may sometimes be elicited by this means. Thus it is possible to determine certain abnormalities of size, position and form.

An increase in size of the liver may be due to cirrhosis, hepatitis, hyperemia, abscess, cyst, malignancy and syphilis. In portal cirrhosis the liver may be large with smooth borders and hard when palpated, whereas in biliary cirrhosis the liver may be enlarged, but soft on palpation.

Hyperemia is characterized by an increase of the liver volume, and radiographically, one may see a dilated decompensated heart.

The diagnosis of liver abscess is possible in most instances if one takes a correct history, for upon it must be based the diagnostic procedure and the interpretation of the findings. The roentgenological features of liver abscess are:

1. Elevation of the dome of the diaphragm, usually the right. The degree of elevation depends largely upon the size of the abscess and its nearness to the upper surface of the liver.

2. Restriction in movement of the diaphragm.

3. A lung reaction is frequently seen, usually when the abscess is near the diaphragmatic surface, and in some cases as has been noted by Pancoast,² the time of onset appeared simultaneously with the diaphragmatic reaction.

A rather sudden increase in the elevation of the diaphragm in a case being serially studied may be a sign of rupture of the abscess under the diaphragm. Whipple³ in a review of over one thousand cases of subphrenic abscess states that the focus of infection was primary in the stomach in twenty-five per cent., the appendix in twenty-one per cent., the bile tract in sixteen per cent. and the duodenum in five per cent. The other abdominal organs and the chest are foci of infection much less frequently. The x-ray features of subdiaphragmatic abscess are:

1. The right leaf of the diaphragm is usually definitely high and fixed. Frequently one sees gas below the diaphragm with often a fluid level which changes with the position of the patient. However, free fluid and gas are often not visualized.

2. Lung reaction is frequently seen.

Diaphragmatic pleurisy must be considered in studying subphrenic abscess. The roentgenological examination shows an elevated diaphragm. Free fluid and gas are absent. There is an absence of the lung reaction. Occasionally, diaphragmatic pleurisy may go on to fluid or pus formation.

Hydatid cysts of the liver, although rarely seen in this part of the country, must be considered. They are visualized when the walls of the cyst are calcified. The daughter cysts often are seen at the vicinity of the mother cysts ranging in size from a hen's egg to a sago particle. A re-

action to the Wasoni test and a definite osinophilia in the blood films are present.

In cancer one notes an increase in size of the liver volume with nodulation along the diaphragmatic borders.

One hundred cases of tertiary syphilis of the liver were studied by MacCrae and Caven,⁴ and of the twenty-four which came to death, only one was due directly to lues. Sixty per cent. of the cases occurred from the age of thirty-one to fifty years. Roentgenologically, the findings of a relatively marked enlargement of the left lobe as compared with the right, associated with a hard liver whose surface is uneven, should always suggest the possibility of syphilis. A Wassermann from the blood or tapped peritoneal fluid will verify the findings. The therapeutic test of mercury and iodide is often striking.

Hepatoptosis may be mistaken for hypertrophy. The hepatic organ is normally in contact with the diaphragm. In ptosis the separation of the upper hepatic border from the diaphragm becomes apparent.

One must also bear in mind that a high position of the diaphragm may be a result of a phrenic exeresis.

In a large per cent. of cases a clinical diagnosis of gall bladder disease, duodenal ulcer and pathological appendix is, to say the least, very trying. I believe that the advantages of the fluoroscopic screen in the examination of the digestive tract can hardly be too strongly emphasized. Not only can one visualize the anatomical location of the organ and note the motility, peristalsis, the nature of the irregularities of contour, etc., but most important of all, one can elicit on palpation the symptoms complained of by the patient and definitely know the anatomical structure responsible. The screen also affords the convenient opportunity for inspecting the chest and abdomen for lesions which may affect the digestive tract reflexly.

Carcinoma of the stomach and head of the pancreas, as well as chronic pancreatitis, not infrequently simulates bile tract disease. The x-ray findings of gastric cancer are familiar to all of you; however, the indirect roentgenological findings of cancer of the pancreas are not so well understood. The malignancy often causes an obstruction to the third portion of the duodenum either partial or complete. One often sees reverse peristalsis at the point of complete or

partial obstruction, and not infrequently at the screen examination one may palpate the tumor mass at the site of the duodenal horse-shoe. Roentgenologically, the diagnosis of pancreatitis is made by exclusion.

Duodenal stasis not infrequently very closely simulates bile tract disease. The obstruction may be due to duodenal bands, inflammatory adhesions and compression of the third portion by the superior mesenteric artery and its branches, and not infrequently a malignancy of the stomach occludes the third portion of the duodenum.

Hypo-acidity (achlorhydria, achylia) is often resultant from a depressive neurosis. This condition frequently simulates bile tract disease. The Graham gall bladder study reveals an absence of the gall bladder shadow which usually indicates gall bladder disease. However, if the patient is placed on hydrochloric acid therapy a Graham gall bladder study will now reveal that the gall bladder shadow is distinctly visible. The absence of the gall bladder shadow in the first instance in achlorhydria, is in all probability due to a relaxed sphincter of Odi allowing the bile to empty directly into the duodenum. It is therefore very important that the radiologist should take into account the clinical story of the patient when eliciting and interpreting the roentgen findings.

Pneumo-peritoneum or inflation of the peritoneal cavity with various gases is a spectacular means of demonstrating the abdominal viscera, and in selected cases, has a definite place in roentgenology.

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WHAT MUST BE DONE AND WHAT MUST BE CONTENTED WITH

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Physicians must be brought to realize that it is a part of their business to cause the public to utilize a better and more complete "health service." To bring about such a better health

service and incidently to improve the medical business there are certain things which must be done. Certain other factors must be actively contended with.

Even at the cost of repetition we must here state that we are not criticising those who have been and still are actively working in our interests. The public and medicine owe these men a large debt of appreciation. We can not expect them to do more than they are doing; these men perform every duty any other member performs, and in addition they carry on all other activities that many members shirk. We impose upon these men whom we seem to expect to carry on this work without pay from us even when it requires that they sacrifice money and energy from their own affairs.

Medical service must be made as efficient as possible. There are too many physicians who are unnecessarily slow in making examinations or rendering appropriate medical treatment. Compare the average service given in physician's offices with the instantaneous, smiling service given in first class hotels, restaurants, railway ticket offices, etc. In many instances these businesses depend upon the fact that the customer can step into the place of business and receive immediate, pleasant service. Undoubtedly certain large clinics owe their present size to having developed this feature of their service. If certain men are too lazy or too inefficient they should be urged to improve their habits. If some men are charging so little that they can not afford to give service they should be shown the error of their ways. If some feel their incompetence in certain respects the societies should provide instruction clinics for their instruction. If some men are seeing so many patients that their time for each is too brief their avarice should be censured.

In some instances a patient is charged too much for the service received, or his time is wasted, so that his job is endangered through his visits to his doctor. For example there are offices in which syphilis is treated. The treatment of this disease should be planned to include about forty visits a year to the office. Patients are often required to wait from one to three hours and we may presume that they thus waste eighty working hours during a year's treatment. This amounts to about ten working

days. There is no justice in imposing this loss upon our patients. Surely a proper distribution of patients among physicians would be advantageous to both patients and physicians.

It has already been brought out that there should be intelligent, constructive propaganda in the direction of a wider use of health service. This should utilize all avenues of communication, such as word of mouth, radio, the movies, the stage, news items and by attractive plainly written printed matter upon subjects that laymen are interested in.

Bound up with medicine are several other businesses, including pharmaceutical and chemical manufacturers, retail druggists, medical publishers, supply and instrument dealers and others. At times various ones among these have "run wild" and exploited the public and medical practitioners. Whether hospitals, health resorts, nursing, cosmeticians and dietitians should be included is a matter of opinion. No agency has done as much to thwart these various exploitations as The American Medical Association by its various activities during the last twenty years. The work of this Association should be more widely appreciated and encouraged so that every newly proposed method and suggestion might be promptly investigated and evaluated, and instead of their introduction being left to the activity of commercial promoters, who awaken some hopes by unproven claims and reap a harvest before the true worth of the new method reaches a proper appraisalment.

Organized medicine should adopt a consistent policy and set up rules, and see that these are lived up to by the lazy, while they are not set aside or ignored by the shrewd.

Charity should be placed upon a sensible basis, and patients should not be used by incompetent men to gain proficiency. Men who now seek proficiency by giving their services in dispensaries and clinics should associate themselves with a qualified teacher. The patient should be treated by the teacher and the teacher should be paid for his services. Society should pay for medical service just as it pays for fuel, food and shelter and the accessories of medical service. If any physician feels a call to give to the poor it is suggested that he donate money. Wouldn't it surprise every one if physicians did suddenly do as other men do, i. e., give money and then

receive it back in payment for services rendered? Still, why shouldn't physicians do just this?

The practitioners who cloak their own selfish activities in the mantle of charity and philanthropy should meet the solidified condemnation of honest people, both within the profession and among laymen. The philanthropies of great steel magnates and of great oil barons are only possible because their own business is conducted in a businesslike manner. If they felt so sorry for their fellowmen that they failed to demand full payment for steel and oil products, where would we all be?

Each individual physician should be conscious of the fact that he is a partner in the medical business and he should so act, that he does not injure the business in which he is interested or his partners. Each individual physician should exercise an active interest in medicine as a whole. Organized medicine should manifest an interest in the individual practitioner and his prosperity from the day he first inquires regarding medicine as a career until his death.

These may sound hard or impossible of accomplishment but they are not beyond the range of possibility. Whether they can be accomplished depends entirely upon the ability and determination of medical men.

Those matters that demand active counteraction include the present effort to socialize medicine, the present propaganda to relegate physicians to secondary place in health matters, the present efforts of laymen to grasp the business side of delivering health service to the individual citizen, the propaganda of interests that are admittedly antagonistic to medicine, and the harmful tendency toward the over growth of foundations and endowments as relates to medicine.

In most instances these activities that demand active opposition are well organized and financed and controlled by very shrewd managers. That many of these movements do finally collapse does not justify passive tolerance toward them. Each is replaced by successors and the parade goes on endlessly, so that medicine and the public face a continued opposition to full, efficient, adequate health service. Physicians are very much like a man set upon by mosquitoes. When the mosquito gets tired or filled up he will quit. When

frost comes they will succumb in large numbers. Yet a man under such circumstances does not passively permit them to work their own pleasure.

At this point it might be interesting to give some thought in another direction. Today every effort is made to obliterate all evidence of sickness and death. This has progressed to such a degree of perfection that many citizens succeed almost entirely in avoiding contact with these unpleasant actualities. Psychiatry explains the ease with which men can eliminate unpleasant thoughts from their consciences when they will to do so. Hospitals resemble fine hotels. In many instances a period of hospitalization is regarded as an adventure. Death is surrounded by flowers. The body is removed from the hospital to the mortician's chapel. The funeral is driven rapidly and luxuriously to the cemetery. The acquaintances scarcely feel the shock, even the home may not be much upset by these events.

The woman in labor is hurried to the hospital and her trial evokes little sympathy from husband and associates. This acts to deprive the wife of the sympathy of her husband. Many husbands of this day do not appreciate what a woman's labor is. It is true that many men now feel that labor is not much. The hospital and the nurses provide a pleasant place in which the wife and babe spend a few days in considerable luxury. They even wonder what the doctor does in connection with the case.

Diphtheria and other contagious diseases are so carefully secreted by the health departments that one must go out of his way to prove that these things actually exist. We have taken several "christian scientists" to contagious hospitals and noted their horror when they appreciated that diphtheritic membranes do choke innocent babes to death. Many of these people succeed in justifying their opposition to medicine because they have no experience with disease. Experience with gangrenous appendices, ruptured ectopic pregnancies, fractured bones, edema of the glottis, ileus, epithelioma, etc., is so well avoided that they believe the reports about them are exaggerated.

This effort to minimize the seriousness and actuality of sickness and death undoubtedly hurts the medical business, and retards the public utilization of full health service. Even the govern-

mental reports of morbidity and mortality are carefully censored. It is a surprise even to physicians when they discover that a considerable number of deaths and much illness go on all about us every day without in any way making their presence felt upon our lives.

Honesty demands that too great suppression of statistics and too complete shielding against the actualities of sickness and death should be done away with.

It may be accepted as true that tolling of a church bell in connection with every funeral and a slower pace in the direction of the cemetery would benefit the church, the people and medicine.

This does not indicate any desire to return to those dark days when fear of death and dread of the mysteries incident to the older conception of illness drove people to depend upon charms, pills and powders. Physicians have been successful in developing the science of living until magic and superstition are largely displaced. However, it is well to recognize that there are several proper factors that serve to support every business. One is the desirability of possession. Surely medicine can say a great deal about the desirability of possessing good health, a happy healthy family, and a goodly number of years. Another is to gain increased comfort and pleasure. Medicine is second to no other business in the value of its service in this direction. Fear plays a very important part in the success of every business. We shun shabby clothes and patches because we fear the comments and thoughts of our associates. We sit in high priced theatre seats because we fear the sneers of mere strangers. We purchase expensive automobiles and struggle to occupy luxuriant homes. Our wives are afraid to wear a hat or cloak of last season's styles. We are afraid to eat spotted food or drink questionably pure milk. We are apt to continue a disappointing marriage because we are afraid to go through the ordeal of being divorced. Fear, then, is an important factor in every business. Why then should we not admit that fear of becoming inefficient through chronic illness, the fear of dependency and of death are properly themes for propaganda in the promotion of the medical business. Surely to eliminate fear by belittling dangers and actualities is dangerous.

Bankers are regarded as honorable men. Insurance companies are esteemed as commendable enterprises. The basis for saving upon which banking depends and the basis for insurance is largely fear. These businesses keep constantly before as many persons as they are able—fear of poverty, fear of dependency, fear that when a great need or money arises the person may die because he can not finance the treatment or replace a loss.

A need exists that each citizen be educated to budget for health. Propaganda should be maintained to show each one that health does cost money. Propaganda should be maintained to show the citizen that industry and merely living, give rise to illness, that being born may be accompanied by handicaps, that ill health means inefficiency and lowered earning power. Propaganda should be maintained to show that a parent has done a wrong unless he has so cared for his child that the child reaches his maturity possessed of good health and free from handicaps. Propaganda should be maintained that shows each citizen that a lack of success very often depends upon some medical problem.

Our food, our shelter, our protection and our pleasures are not given to us. We must work every day to secure them.

Health is dependent upon exactly the same laws. Whether it is secured via paternalistic government or by funds rich men accumulate, or from the patient's own purse, in the last analysis either the citizen pays for health, clothes, food, government, recreation, or he goes without. Some one must be paid and there is no example of government controlled business that warrants the belief that socialized medicine will be as good as private practitioners. Government railroads, police, sanitation, food, mines, insurance, newspapers and parcel delivery are not recognized as equal to privately controlled agencies. In our most advanced communities public activities are always supplemented by private enterprises for those who demand the best service.

As a group physicians have by education, both as youths, as college students and as practitioners, been swayed by a peculiar idealism, often promoted by persons outside the profession, and at other times by shrewd men within the profession, so that the great mass of the profession have blindly accepted the teaching that doctors

are to be unbusinesslike, idealistic paupers. Always, however, while the innocent lambs have been following this ridiculous idealism, the laymen and the "successful" practitioners have been teaching this brand of "idealism" by word of mouth and in the conduct of their own affairs they have practiced very efficient business systems that served to increase their own financial status.

Laymen should begin looking the fact squarely in the face. The layman's budget must include an account for "health service" just as it should include accounts for food, lodging, clothes, recreation, burial, etc. We do not propose here to outline what this should amount to. Every one realizes that he eats and dresses according to what he is willing to pay. No one can get health service second hand, at a rummage sale or cheap, via the junk dealer. If health is bargained for the buyer must realize that just as when he spends too little for food or clothes what he receives is usually inferior goods. He does not ever get a first class meal for a third class price. A cheap suit is never made of first class goods and workmanship. Surely when it comes to bargaining for health service the customer is in no position to force any of his own will upon the doctor. There is only one protection for the layman. That is the integrity, conscientiousness and honor in the heart of the physician. Every layman should search his own conduct toward physicians and decide whether this entitles him to ideal service. The past and present conduct of medical men certainly demonstrates that they can be trusted to give full value and honorable dealings. There is no room then for the political bargainer, the corporation bargainer, the insurance bargainer, who undertake to act as the go-between for the public and practitioners. When a layman is represented by one of these, in dealing with his medical attendant, surely he is not in a position to be proud of.

It is time that every one includes in his budget an account for health service, comparable with the accounts he provides for other necessities. If he chooses to eat inferior food, if he chooses to wear inferior clothes, we admit this is his privilege. We do not then propose to dictate what he must value his health service at. He should be privileged to make this account as meager as he chooses. He should, however, be told that his

small allowance only secures a comparably poor health service.

When a man purchases a cheap suit, he does not reduce the dealer's profit. When he uses cheap fuel all who handle it are allowed their profit and there is no one really harmed so much as the final consumer. A community or a man that provides funds insufficient to purchase adequate health service suffers more than do the physicians. The public has "been kidded by experts." Medicine should perform a real service by spreading the truth with regard to this matter.

We must now consider the question. What about the man who finds himself in need of health service who may have been prosperous but has met adversity, or those other men who have been inadequate all their lives but who require treatment. There is a group that are so deficient that their continued existence is no comfort or pleasure to themselves. They can never be benefited by uplift movements nor rehabilitated because they are so constituted that they know nothing above the plane upon which they exist. This mass of human wreckage furnishes the means of support for a considerable number of persons who collect money and operate charities. In many instances these agencies take advantage of a contributing public. The agency very often needs this poverty stricken class to make its own living. It is time that medicine be allowed to escape the burden of carrying too large a share of this load and that intelligence be used by sociologists in caring for these people. With regard to the man who actually has met adversity, it is surprising to discover that he still has credit and we have often been amazed at the manner in which providence seems to lend a hand in rehabilitating these persons. As a matter of fact, today there is a great turning away from the paupers and down and outers by all charity and social service workers. They seem anxious to cultivate groups who heretofore have been regarded as above "charity" to the end that the field for "charity" may be broadened, and more need for more social service workers may be developed. There is definitely a movement among these people to bring more people under the control of charity.

The reason for this digression is to bring di-

rectly home the point that medicine and the giving public have not properly investigated the subject of charity. The connection with the subject of budgeting for health service, is that physicians have too often felt reluctant to charge properly, to emphasize the act that health costs money, and the public some way feels that the position here taken, that health must be paid for is sacrilegious in some little understood way. This false attitude has been built up at the expense of all of us by persons who live from the existence of charity. This is not a condemnation of charity workers as a whole. It is an expression of the belief that the time is ripe to deal with them and their work upon a sensible and efficient basis.

Social service workers, public health officers and charity workers all make their living by their work. They do not deserve the crown of martyrs sometimes bestowed upon them. They work at the business of meeting one of society's needs just as do grocers, truck drivers and others. Medicine has a right that it be dealt honestly with by these groups, instead of having each of these groups, being permitted to make its living, giving away physician's services. Intelligent care for dependents and deficient, and seeking to find suitable employment for such as can work is the great field of opportunity for these groups of charity workers and others.

Just now a great deal of harm is being done because too much propaganda is being carried on by various agencies that seek to cheapen the cost of health services. The layman is being led to believe that health may be had for nothing or very cheaply, provided he follows these leaders. Of course it is overlooked that these leaders are to be paid when they do succeed in providing health service via charity, endowed institutions, or governmental bureaus. In the end then their plan is that the citizen will have to pay for a social service and a physician, so where is the gain? Medicine must meet this propaganda and show the citizen that health service can not be had free. He should be shown that better service can be had with physicians directing health matters than by having laymen dictating to both physicians and laity.

The citizen must face the matter frankly. He will have to pay for health service whether it

comes through one agency or another. Then he should plan his finances so that he provides this service for himself. This is what is meant here by "budgeting." Making a financial programme in advance that provides intelligent spending of income to meet most efficiently future needs of the individual, family or community constitutes the fundamental of "Budgeting".

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THE REACTION OF THE LAITY TO THE PROGRESS OF MEDICINE*

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As we turn the pages of medicine of the past fifty years, we, as physicians, are scarcely able to keep up, much less the laity. So tremendous has this progress been in the past twenty-five years that many of us have had to learn anew some of the things that we were taught in medical school. The medical profession swung from the no-germ theory to the germ theory, from not simply the cure of disease, but the prevention, also. In a recent book by Paul de Kruif on *Hunger Fighters*, the author portrays the struggle man has had against starvation. He tells how the wheat rust, the hog cholera, the foot and mouth disease, etc., have been combatted. As many plants and animals have been infested with pestilence, so man has had a struggle to rise against pathogenic bacteria. The more crowded civilization becomes, the more difficult the task. Man himself has had the responsibility of relieving plants and animals, and also himself from the disease organisms. It is within the past twenty-five years that he has been able to find wheat which is able to withstand the drought, and serum against many animal diseases. He has been able to find the life cycle of many worms infesting man, he has been able to conquer yellow fever, and, to a great extent, malaria and hookworm.

In the midst of our heritage of the numerous discoveries, we forget the work and the sacrifice that has been made for them. Carleton, who gave his life to the discovery of a hardy wheat that would withstand drought and rust, died broken-hearted and a pauper, though he saved our people millions of dollars. The young doctor

*Read at the meeting of Champaign County Medical Society, January 10, 1929.

who gave his life in the cause of discovering the transmission of yellow fever has scarcely been heard of. The medical profession is to be lauded for not exploiting any of its discoveries, but it is only within the last few years that the laity has had a small chance to know something of the men who have done the wonderful work.

How is the laity responding to all the wonderful medical progress—their response is much in proportion to the attitude of the medical profession and to the knowledge received from them. There is one group in the profession who believes that knowledge will help the laity to respond better, and there is another group who believes that ignorance is bliss. Today, with our multitude of avenues of transmitting knowledge, such as papers, magazines, radios, it is not the question of keeping knowledge from the laity but how can we give them the right knowledge. I believe that medicine and the medical profession will progress in proportion to the real knowledge given the laity.

Dr. Lake in an article on State and Medicine (A marriage that cannot take) in December *Medical Economics*, brings out a number of interesting points. He speaks of the recent attempt of the government to extend the Veteran's Bureau. I do not believe that any of us want to see the Federal government extend the scope of the Veteran's Bureau to include the hospitalization and surgical care of all those who have served in any war of the United States and who are now suffering from any diseased condition whatever, without regard to its having any possible connection with their military service. He says, "Our national, state and municipal public health agencies are a necessary part of civilized life, under modern conditions, and no one would belittle their value or attempt to curb their legitimate activities, even though they represent what is, strictly considered, a phase of State Medicine." Dr. Lake states further, "The government, has, however, the right to disseminate among its citizens such sound and valid general information as will place in their hands the knowledge which is necessary in order to lead a sane and healthy life." Any organization which has as its ultimate purpose the dissemination of knowledge which leads to more sane and healthy lives is an asset to the people and to the medical profession. If knowledge is withheld from the laity, can we expect them to go to a surgeon and

pay much more to have an ingrown toe nail removed, instead of going to a chiropodist; or can we expect them to go to an orthopedic surgeon for an injured spine or to a general surgeon for an attack of appendicitis, rather than the chiropractor whose bold headlines tell of his wonderful cures. The more the laity knows about germ disease and preventive medicine, the less he is willing to take a chance. I saw in a Home Bureau Bulletin the other day—"Our aim is for every Home Bureau Woman to have a physical examination before 'Health Year' closes in February." This large organization of women is responding greatly to this idea which the medical profession has advanced. If this examination is given carefully, with some good advice, to the mother, as soon as little Mary gets a pain in the abdomen the mother thinks of Dr. Smith at once.

A short study of the Parent-Teachers Association will show that they are thinking a great deal in terms of health. Their Child Hygiene Plan of work for 1926-1927 gives the following outline:

1. Education of Expectant Mothers:
 - (a) Urge medical examination by family physician.
 - (b) Promotion of education on prenatal care.
 - (c) Urge persons needing prenatal advice to write for literature.
2. Infant Care:
 - (a) 100% birth registration.
 - (b) Publicity for the prevention of blindness.
 - (c) Promotion of education on the need of medical supervision in proper feeding and on general care of infants in the home.
3. Pre-school Age:
 - (a) Urge the organization of study classes in each association so that parents may be advised that the pre-school age period is one of the most important in the child's life and that their responsibilities are very great. Proper health and food habits are dependent on discipline.
 - (b) Urge physical examination of every pre-school age child in Illinois.
 - (c) Correction of all remedial defects by family physician. Some of the defects that may be found are:
 - 1—Malnutrition.
 - 2—Diseased tonsils and adenoids.
 - 3—Defective sight.
 - 4—Defective hearing.
 - 5—Defective teeth.
 - 6—Goiter.
 - 7—Flat feet.

4. Children of School Age:

- (a) Encourage all parents to have physical examinations of their children annually by family physician.
- (b) Encourage correction of defects.
- (c) Encourage care of teeth by family dentist.
- (d) Encourage physical examination of children desiring working certificate, as prescribed by the Illinois Child Labor Law.
- (e) Health education.
- (f) Nutrition—A lesson on the causes of malnutrition. Besides these, they include lessons on school sanitation and on the causes of retardation in school.

I have given this program somewhat at length to show that the laity are really planning and thinking in terms of health. It also shows that the laity is looking to the medical profession for help to carry out its program. In a report of the National Congress of Parents and Teachers for 1928, we find the following: "Through the campaign to send children physically fit to school, which is generally called the 'Summer Round-Up of Children,' education in hygiene has been actively promoted. As a result, more than 50,000 children in forty-two states have this year received pre-school examination and corrective treatment, and a great amount of directive literature has been distributed for the use of mothers." Is this not a great response of the laity to the medical profession and is it not a great opportunity for the profession to get into the lives of the parents and children?

I ran through the *Reader's Guide* for the year 1905 and the year 1925, and found only two articles on health in the laity magazines for the year 1905; the subject of one article was "Effect Upon Health of Varying Amounts of Borax." I found no article on health education. In 1925 there appeared twelve health articles in such magazines as *Woman's Home Companion*, *American Mercury*, *Saturday Evening Post*, *Literary Digest* and *Colliers*; there were seventeen articles on health education. With this increase in magazine articles on health and the large number of health talks over the radio now, the laity must think more in terms of health. Then there are health organizations that promote thinking in positive health terms with which we all are familiar. Regardless of the many good organizations which are helping the promotion of medicine, there remains with us many quacks. We shall never be able to eliminate them, but they

are bound to decrease as health knowledge increases among the laity.

For safe-guarding the health of the public I believe, with Emerson, that *Light* is the best policeman.

OBSERVATIONS FROM A CHILDREN'S
CARDIAC CLINIC*

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These observations were made at the Mandel Clinic of the Michael Reese Hospital, in the children's cardiac division, where, at the end of 1928, there were 221 cases being actively treated. This cardiac clinic is conducted independently of the adult group, and all children up to thirteen or fourteen are included. Occasionally one is carried to fifteen or sixteen for special reasons, since at this period it is often necessary to give advice as to occupation or further scholastic work, and the longer the patient has been observed, naturally the better is his case understood. Three physicians are in attendance each Saturday morning. In addition, a social worker is assigned to the clinic work as well as to follow the cases in the hospital, thereby attaining almost complete continuity in the follow up care. We feel that this obtaining of the fullest benefit of the social service department is very important, as the worker sees that patients leaving the hospital, both active and potential heart cases, are followed in the cardiac clinic for some time after.

Cases are referred to the cardiac group from the general pediatric clinics, or special clinics of the dispensary. For example, when a patient is recommended for an operation a heart condition is often discovered for the first time during the routine examination. Indeed, a good many children of pre-school age, with heart disease, are first brought to our attention in this way. It has taken us some time to secure the necessary cooperation of the other departments, such as the nose and throat, but in the past three or four years a few of the throat specialists have fortunately interested themselves in our work. Thus we have had some rather gratifying results. In fact, since we have been removing small remnants or tags of tonsil and adenoid tissue (which the recent work of the Doctors

*Read before Chicago Heart Association, April 1, 1929.

Dick has shown can be more harmful than the whole tonsil), and since we have been giving careful attention to the treatment of the sinuses, many cases have perceptibly improved. Indeed, some that had an elevation of temperature for two or three years, and frequent evidences of decompensation, were changed to that less formidable group of inactive infections and compensated lesions, and have become able to "carry on." In fact one of these—a boy—has become an amateur golf champion! While it is true that removing every possible focus of infection does not eliminate it, nevertheless, where properly carried out, it does reduce the number of recurrences.

Then, too, in this clinic every child has a complete blood examination and Wassermann test, a two meter heart plate, an electro-cardiogram, as well as any special laboratory work that may seem of some value to his particular case. The undernourished "heart" children are studied in, and advised by, the nutrition clinic, while certain other cases (and it is surprising to find how many children develop abnormal mental attitudes because of their cardiac condition) are sent to the mental hygiene department for psychotherapy, and are followed by both clinics.

Recently we have analyzed a typical group of cardiac cases from this children's clinic, and have gone over 110 or more records.

The rheumatic group (rheumatism, chorea, and tonsilitis) accounted for 76, or 69%. There were 13 congenital cases, or 11%. The scarlet fever history group was found in about 7%; and the balance, 13%, included those of unknown etiology. The youngest child was two years old and the oldest 16. Six children only were under six years of age. Furthermore, there were 50 boys and 60 girls in this group.

Of this group, 9 had both aortic and mitral lesions. Twelve of the 110 complained of definite cardiac pain and of the 13 congenital cases, found and diagnosed, only 2 had an appreciable amount of cyanosis and clubbing of the fingers. Two of these congenital cases developed acquired endocarditis superimposed on their old defects, as noted by a change of murmur, the presence of fever, and so forth. One congenital case, with marked cyanosis and clubbing of the fingers, died at the age of 14. However, it is well known that the majority of the congenital hearts with these findings rarely survive early adult life and

although cyanosis and clubbing are quite characteristic, when present, they are not common findings to those congenital heart cases that survive early infancy. Two cases with auricular fibrillation were present in this group; one, a girl of eleven, who had been under observation for some 2½ years, and the other, a boy of 8, who has had a fibrillatory heart during the past 9 months. The etiology of both was rheumatic fever.

It was, moreover, interesting to note that in 22 of the patients there were found other cases of acquired heart disease in the same family, frequently in sisters or brothers, and sometimes in one or even both parents. This certainly suggests a possible communicability of the disease.

A gain in weight, as described by McCulloch and others, was found to be a good guide to the progress of the improvement. Indeed, those children sent to Sunset Heart Camp seemed to build up a resistance which helped to carry them successfully through the months that followed. The absence of temperature elevation, as well as the degree of cardiac enlargement, were other important factors in determining the degree of improvement.

The pulse rate, the response to exercise, and the checking up by the physician of the amount of play or work the patient was able to perform, proved satisfactory guides as to the safe amount of activity permitted the patients.

During 1928, it was found necessary to send only 9 children of the 221 to the hospital, but the number confined at home was not ascertained. However, it was seldom found necessary to give digitalis to ambulatory cardiac cases. Either the patients responded to rest in bed at home or were so sick that they were of necessity cared for in the hospital. We observed that those cases with rheumatic nodes ran a more severe course than any others. The nodes appeared to be most numerous and were found earliest on the occiput, and later on the elbows, the knees and the extensor tendons of the hands and feet. I might mention, in passing, that some of the prodromal signs of the rheumatic infection in children are often pallor, loss of weight, fatigue out of all proportion to the effort or play, and a slight daily rise of temperature accompanied by an increased pulse rate.

It seems to me that a very important and somewhat neglected group to examine for cardiac disease is that of the pre-school child, or nursery

school class. At this age children are probably less cooperative; they cry during the examination, thus making a careful examination more difficult, but none the less important; and they receive no regular outside examination as does the school child. All children should be carefully examined at birth for congenital defects and it should be noted that this usually requires several examinations for sure results. Furthermore, there should be more regular follow up examinations, one, two or three weeks after all cases of tonsillitis, scarlet fever, diphtheria, and those other infectious diseases which often affect the heart. If this were done, cardiac disease could be discovered early, and proper treatment could be instituted at once. Also, a longer convalescence after acute infectious diseases, and tonsillitis, is offered as a possible means of reducing cardiac complications. It might be well to emphasize that the conception of rheumatism as essentially a joint disease is principally due to its manifestations in adult life. The more correct conception of rheumatism as a *general disease* of infective origin is based on its clinical characteristics in childhood. It is true of course that one must keep in mind that a child may be very ill from rheumatism although he has never had a pain in his joints.

In conclusion, I should like to emphasize again the necessity of repeated early examinations of children from birth, and after all acute infections. The advisability of prolonged rest and convalescence for any cardiac involvement, followed by graduated exercises before returning to the usual activity. And the early and complete removal of all diseased tonsils and adenoids with the proper and adequate treatment of all other foci of infection, in children showing any cardiac involvement. It is through these simple precautions that we shall realize our best work, and prove that "prevention is better than cure."

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DIARRHEAS OF INFANCY*

JESSE R. GERSTLEY, M. D.**

CHICAGO

For my own convenience, I classify the diarrheas of infancy as follows:

- I. Infectious diarrheas:
 - (a) Dysentery (bacillary).
 - (b) Gas bacillus.
 - (c) Amebic dysentery.
- II. Diarrheas due to food:
 - (a) Improper milk mixtures, overfeeding, underfeeding, and the various causes described by Finkelstein.
 - (b) Spoiled food, especially in older children.
- III. Parenteral infections:
 - (a) Coryza.
 - (b) Otitis.
 - (c) Bronchitis.
 - (d) Cystitis, and so forth.
- IV. Miscellaneous diarrheas, such as
 - (a) Those in the newborn.
 - (b) Those due to heat.
 - (c) Those of environment—nervous tension in the home, change of nurses, etc.

The infectious diarrheas used to play a prominent part in the above classification, but in recent years they are assuming an ever decreasing importance. For a long while there was a great dispute between the Boston school and those of us in Chicago who followed the teachings of Finkelstein, as to whether the diarrheas were due to specific infection or to nutritional disturbance. I think the question was solved for us in Chicago by a study made in connection with Professor A. A. Day.¹ Day, working with Kendall in Boston, had shown that many cases of diarrhea were due to the dysentery bacillus. Using the same technique with our material in Chicago, he was unable to find infectious organisms as a specific cause. At that time we advanced a theory that the difference between the two sets of findings was due to the fact that in the east raw milk was used, and in Europe and in the middle west of the United States milk was boiled. Boiling the milk rules out all intestinal infections except those due to spores. This is probably also the reason why intestinal tuberculosis is reported so frequently in those neighborhoods where raw milk is used, while tuberculosis of infants seems to be of the pulmonary type wherever the milk is boiled. At any rate the number of infectious diarrhea cases is very few.

Should one meet with a case of diarrhea showing blood and above all things pus in the stools, particularly if the infant has been fed raw milk, one should get a stool culture. If dysentery is

*Read at the Kankakee County Medical Society, February, 1929.

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1. Day, Alexander A. and Gerstley, Jesse R.: Am. Jour. of Dis. of Child., 1915, 9, 233.

found, two dietetic treatments are available. Kendall has shown that the dysentery organism does not produce toxin if grown on carbohydrate medium. He therefore recommends a diet high in lactose. I think that most clinicians are agreed that the diet is not as important as formerly considered. The essential seems to be to give the patient sufficient food. Much of the mortality of a decade ago was due to starvation, with the idea of improving the nature of the stools. Now we realize the danger of hunger and offer our little patients small quantities of food at frequent intervals. Recently a German investigator has advised the use of cream in reasonable quantities and thinks the high fat has a favorable effect upon the course of the disease.

The success of dysentery antitoxin is still questionable.

For gas bacillus infections, buttermilk is the ideal diet. The gas bacillus thrives on carbohydrate. It cannot tolerate high protein or lactic acid. Buttermilk or lactic acid milk without carbohydrate meets all these requirements of therapy.

Amebic dysentery is exceedingly rare in young children. I include it in the above outline because Geiger recently showed that this disease is more common in Chicago than was formerly thought. Perhaps we should be more on the alert, in children who come to us from out of town.

The diarrheas due to nutritional disease as described by Finkelstein are infinitely the most common and are those in which I have been particularly interested. Finkelstein and his school developed the idea that carbohydrate when introduced into the baby's intestine was attacked by the bacteria normally present in the intestine and fermented into the so-called lower volatile fatty acids (formic, acetic, etc.). These acids in turn irritate the intestine and cause diarrhea. The objection to this theory is that breast milk with its 7% carbohydrate (cow's milk has only 4%) produces acid stools but is an ideal food. The success of albumin milk on the other hand, with its high protein and low carbohydrate, is an argument in favor of the theory of Finkelstein and Meyer. They try to reconcile the conflicting evidence by suggesting that carbohydrate ferments in the intestine in a different way when given in breast milk or cow's milk. We shall return to this later.

Following these pioneer studies, Finkelstein and Meyer noted that when children get mild infections such as coughs, colds, otitis, etc. (parenteral infections) they develop disturbances in nutrition and diarrheas. Further clinical observation showed that diarrheas from this source were very much more frequent than those due to high carbohydrate mixtures. As the stools in these cases were acid just as the stools in the high carbohydrate diarrheas, they concluded that the parenteral infection was an important factor in augmenting intestinal fermentation.

To study these points more carefully we decided on the following experiments:

1. To see if there was any difference in the acids excreted in the stools of babies fed on breast milk and on modified cow's milk.

2. To try the addition of carbohydrate to each of these mixtures and see if there was a real difference in the types of acid excreted.

We have been at this work for over four years and our results have been reported in detail elsewhere.²

The results of these studies were exceedingly interesting and surprising to us. In the first series of experiments we found that there was some difference in the acids excreted on breast milk and on diluted cow's milk with 5% carbohydrate. Formic acid is in excess in breast milk and acetic acid in the cow's milk stool. Another acid propionic, was found invariably in the artificially fed, never in the breast fed. We were also interested in noting that the stool of the cow's milk baby was much heavier than that of the breast fed. The most interesting part of the work was the second series of experiments in which we added carbohydrate to both diets. High carbohydrate added to breast milk caused very little change. There was little increase in the amount of acid or the weight of the stools. To our amazement the addition of 12% carbohydrate to the diluted cow's milk caused far less change than we expected. There was some increase in the frequency and in the weight of the stools as well as in the acid, but nothing in either clinical or chemical evidence to approximate the conditions found in the severe diarrheas which we treat clinically.

The most important of our observations was

2. Gertsley, Jesse; Wang, Chi Che; Boyden, Ruth E.; Wood, Agnes A.: *Am. Jour. Dis. Child.*, 1928, 35, 580 and also *Am. Jour. Dis. Child.*, 1928, 36, 289.

that in a child being fed two-thirds cow's milk with 6% carbohydrate (a common formula). During an attack of bronchitis he developed a severe diarrhea and excreted acid in three times as great amounts as the children fed on much higher quantities of carbohydrate. Following his recovery, the carbohydrate in his diet was considerably increased, but still the acid output was nowhere nearly as great as during the time of the bronchitis, when he was on a much lower sugar diet.

These studies are very significant. They suggest that the role of carbohydrate in causing diarrhea has been considerably overdrawn. Unquestionably parenteral infection in some mysterious way influences the fermentation of sugar in the intestine far more than the actual quantity of sugar in the diet. We are still working on this problem and hope to have more to report later.

In the group which I have called miscellaneous, there are types of diarrhea which have not been sufficiently studied. A decade ago, diarrhea of the new-born was relatively common and often fatal. Just as in the case of bacillary dysentery, we now think that many of these diarrheas and deaths were due to insufficient food. The treatment consisted of starvation. We find that a great number of these children will get well if the diet is increased rather than decreased.

There is a large group of diarrheas due to environmental influences. What the factor is, we do not know, but in some way it is probably related to the baby's nervous system. Children in a household of great nervous tension are particularly subject to gastro-intestinal upsets. While this occurs most frequently as vomiting, diarrhea is not an uncommon occurrence. In the same way it has been noticed that a baby who has been in the care of a certain nurse for considerable time, will be inclined to react with a mild temporary diarrhea if there is a change of nurses. One of the most striking examples of this was during the course of our experiments. In order to separate the stools from the urine, we placed the baby upon a metabolism bed. Invariably, although the child was comfortable and contented, he showed an increased frequency of stools. This diarrhea invalidated many of our experiments and it was only by giving these children a course of training, placing them on the

bed one hour one day, two hours the next, and so on, that we were able to have conditions feasible for our experiment.

These diarrheas due to environmental influences are, I suspect, much more frequent than we have previously thought. I am laying some emphasis upon them to show that there is a large group of diarrheal cases which occurs absolutely independent of food and infection, and requires absolutely no adjustment of diet.

This has been my own working outline of the causes of diarrheas in infancy, and I have found it of considerable service.

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THE CONTRIBUTION OF STUDENT HEALTH SERVICE TO THE PROGRESS OF MODERN MEDICINE*

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The progress of modern medicine is determined by three factors: a sufficient number of well trained physicians, fruitful research and a public which appreciates the possibilities of medicine to serve it. The greatest of these three is an intelligent public sympathetic with the medical profession and ready to give public health administration the necessary moral and financial support to make it commensurate with scientific knowledge.

Medical Training.—There are approximately 149,521 doctors in Continental United States, which is one physician to every seven hundred ninety-three persons in the population. The total deaths in the profession during 1927 was 2,790. The number of graduates of medical schools for the year ending June 30, 1928, were 4,262, which, without allowing for the failure of the two periods to coincide, is a net gain of 1,472 doctors for the year.

In spite of the requirement of high school graduation, two years' college education, four years' professional training and a year's internship to be eligible to practice, the number of students entering medical schools since 1919 have shown an annual increase of about 1000 per annum. As only 17% of those matriculating fail to graduate, the steady increase in the number receiving the M. D. degree, not only in-

*Read at meeting of Champaign County Medical Society, January 10, 1929.

sure a replacement of the physicians who die or become inactive but it provides for the annual increase in the population.

There is no shortage in physicians for the country as a whole but there are certain irregularities in their distribution that are due to the social, economic, educational, and professional advantages associated with density of population, rapid transportation, and with the need of hospital and laboratory facilities in the practice of modern medicine. Happily, the rapid increase in the mileage of hard roads is making the town and country mutually more accessible and will go a long way towards relieving certain rural sections of the disadvantages of this unequal distribution of physicians.

These considerations are presented only to set forth in bold relief the fact that whatever its handicaps, modern medicine is not likely to be materially retarded in its progress by the lack of a sufficient number of highly trained doctors to give it momentum.

Productive Research. Surely, it is neither necessary to cite the epochal contributions to medicine during the last fifty years to prove medical progress has not been seriously impeded by the want of discovery during the last five decades, nor is there need to observe that medical knowledge increased more in the period from Pasteur to Banting than from the beginning of the practice of medicine by ancient priests to 1870.

Research has been overwhelmingly prolific and its results revolutionary. The profession has been swamped with facts and technique until in self-defense its members have been compelled to limit their activities to escape superficiality and to make it possible to exploit adequately a particular field.

In brief, this is the story of the creation of the hundred and one specialties of medicine. Likewise, it is the history of productive investigation at the bedside, in the clinic, in the laboratory and by the great institutes of research. Even today one discovery follows another with such rapidity that there appears to be no decrease in the fertility of research. There is no indication that medical progress will halt because of the failure of scientific investigation to mine new facts.

The Public's Perplexities. If the profession has had to narrow its front to increase its depth,

what must be the perplexities of the average layman when he contemplates medicine in its relation to himself, his family, and his community? If it is true, the public's knowledge of medicine is on the average two generations behind the profession, what must be its medical conceptions when medicine has acquired more facts in the last five decades than in the previous five thousand years?

In the disparity between scientific knowledge and public information is found the explanation of a graduate of two universities putting a fly blister on his elbow to keep influenza out of his mouth and of the action of the painter with a fourth grade education on a city council defeating a model milk ordinance endorsed by the local medical profession, the Surgeons-General of the Army and United States Public Health Service and by the director of the state department of health. It also explains the reason for an outstanding financier glazing his home with costly, special glass to protect his children against rickets when two minutes out of doors would be worth fifteen hours inside the house fifteen feet from the window.

Should surprise be registered when individuals otherwise known for their excellent judgment are found worshipping at the shrines of pseudo-science and unscientific medicine? Glance at the current periodicals and behold the virtues of glorified antiseptics, the miracles wrought by yeast, the wonders accomplished by artificial light, the preposterous claims of the latest proprietary, food or fad and by no means least the sylph-like beauty to be derived by maidens reaching for a cigarette instead of a sweet.

In such advertisements, the truth has been twisted cleverly to trap both the ignorant and the gullible. Such health appeals block the progress of medicine by filling the laymen's mind with medical "bunk" and scientific "hoovey," to his own detriment and rob the well trained physicians of an opportunity to render a real service. Neither medical training nor research can meet such a situation, education alone is the solution. Knowledge is the only means of salvaging the public.

The Rising Tide of Quackery. The public is becoming more and more enmeshed by cults, "isms," "pathies," and therapies. If such a statement creates skepticism, it may be immediately dispelled by recalling that in the year 1929

voodooism is so powerful in one of the most prosperous counties of one of the oldest and most enlightened states of the Union, that when murder is committed by its exponents to get a lock of hair to bury eight feet underground to break a "spell," judicial and municipal officials join forces to protect local business interests by restricting publicity concerning belief in the sorcerer's art.

Quackery has never been so high-powered, more able to deceive the average individual, more costly than today. The great developments of science in the last few decades afford it so many chances for new disguise in apparatus, method and formula that it has not only become a menace to health and the progress of medicine, but it takes millions of dollars annually from those least able to part with their money.

Though the truth is said always to triumph, the odds favor quackery. While a scientific fact is singular, fraud built about it may be multiple. It is easier to educate to buy than to teach to understand. Besides mankind in general seems more resistant to truth than humbuggery.

As medicine becomes more technical by the greater application of biology, physics, and chemistry to diagnose, control and treat disease only the searching rays of knowledge can save the public from the pseudo-science of the mountebank. Education alone can set before the average citizen in true contrast the aims of scientific medicine and those of the ignorant and parasitic who deliberately block its progress.

The Magnitude of the Task of Medicine. The mission of medicine is not only the alleviation of human suffering but it has the more sacred duty of promoting a national vitality and intelligence which shall make our beloved nation immune to the forces of degeneracy and retrogression that laid waste the empires of the past. As Laycock has pointed out, man as compared with other animals is peculiarly predisposed to degeneration of the nervous system; and civilized man more so than his uncivilized brother. For this reason and for the fact that nations with painful regularity have risen only to decay, certain observers have seen in civilization the symptoms of disease whose end is national dissolution. If such views are correct, modern medicine has a challenge which will tax its every resource.

There are no more undiscovered continents in

which civilization may be revitalized by pioneers developing a new life in a new world. The rejuvenation of nations by incursions of a more vigorous primitive people becomes unlikely with the greater development of communication, the intermixture of customs and world-wide recognition of national boundaries. As the center of population moves farther and farther into the city and rapid transportation makes the rural sections increasingly the suburbs of a metropolis, the countryside correspondingly loses its value as a producer of a bold peasantry able to give renewed vigor, "Where wealth accumulates and men decay."

National vigor must depend more and more upon the taking of thought. Man faces the issues squarely of whether or not he is capable of employing scientific knowledge in time and thoroughly enough to produce racial betterment, to insure each of his fellows sanitary living conditions and to obtain the health which qualifies him to live most and serve best.

While research has thrust upon two generations a mass of facts concerning heredity, the processes and development of life, the interrelationships of species and the possibility of advancing human welfare, greater than man has known since Adam left Eden, parallel development in the mechanical arts, in the use of electrical energy, in the application of chemistry and in transportation make this extraordinary advancement only relative rather than phenomenal.

Two health problems have been produced for each one that industrialism and engineering have furnished the means of solving. Needs arise and opportunity knocks but generations pass before the one is met and the other heard. If to this situation is added the usual long latent period between the acquisition of knowledge and its general use by the public it is clear, modern medicine faces a gigantic task in making its performance commensurate with its possibility.

The Trend of the Health Movement. From isolation practiced by the ancient Hebrews and later legalized as quarantine by the Venetians, preventive medicine entered an era of sanitation. From an epoch of "clean-up," it has become intimately personal. Therefore, its future depends upon the success of making every intelligent citizen, an active public health worker; otherwise, majority action to obtain individual benefit is impossible.

Today, the periodic physical examination and health education are declared to be the only means by which modern medicine can further increase the average expectancy of life, promote physical efficiency, and insure national vitality. If such are to be the weapons of the profession in a new day to meet new conditions, is there an agency anywhere in a more strategic position to serve the public and to advance the progress of medicine, than a student health service in an institution of higher learning? In their ability to serve society, is the secret of the phenomenal development of these departments in universities, colleges and normal schools.

Student Health Services. A student health service is a health center within an institution of higher learning. It is dedicated to the conception that constructive dynamic living in the best environment that modern science can provide is the rightful inheritance of every individual. To attain this ideal, it teaches the student the principles of hygiene and sanitation as they relate to him, to his home, to his vocation and to his community. Its methods are classroom instruction, the periodic physical examination, the personal conference, demonstration of disease control and the maintenance of sanitary surroundings. It strives to reveal to the leader of tomorrow the benefits to be derived from hospitalization, public health and modern medicine because such knowledge will mean much to him, to his family, to his community, to diagnosis, to treatment, to the equipment and maintenance of hospitals, and to national vigor.

It is not the purpose of health services to pauperize nor paternalize students nor to socialize medicine but they do covet opportunities to do their part in putting the college graduate and the physician shoulder to shoulder to mutual advantage in serving the public, in advancing modern medicine and in making a better world.

LACTIC ACID MILK IN INFANT FEEDING—REPORT OF FOLLOW-UP STUDY OF TWO HUNDRED AND FORTY CASES

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This report is based on a study of 240 cases of marasmic or atrophic children, below weight infants, babies that did not do well on ordinary

milk mixtures, and cases showing insufficient development as where weight became stationary after fluctuations or where there was a pronounced decrease in weight.

It is respectfully submitted with the single hope that it may prove of real service and help in feeding certain babies.

The relative indigestibility of cow's milk is largely due to the presence of a "buffer substance" capable of neutralizing the gastric juice, and intestinal secretions. By neutralizing cow's milk with some form of acid the influence of these "buffer substances" are eliminated. The content of inorganic mineral salts in cow's milk is three and one-half times as great as in breast milk. In young infants gastric digestion is at a minimum and acid secretion is limited. We also know that the acidity of the gastric contents of infants suffering from nutritional disturbances is much lower than that of normal infants. It can readily be seen that reduction of the already lowered free acidity by the "buffer substances" of cow's milk will surely interfere with gastric digestion in infants. The addition of lactic acid to cow's milk minimizes the buffer action of the milk, so that the hydrochloric acid present in the stomach is left free to exert its influence toward gastric digestion.

Doctor McKim Marriott, who has discussed the subject of lactic acid milk feeding concisely and well, in *Diseases of Children*, American Journal, Dec., 1923, Vol. 26, Page 542, describes the buffer action as follows: "The property of binding large amounts of acid and converting hydrogen into a non-ionized form, thus to all intents and purposes neutralizing the acid."

The question presenting itself to the average practitioner, is this: Can this principle be practically applied in every-day infant feeding?

Dr. Julius Hess has said: Every formula with which feeding is begun should be looked on as experimental, and the reaction of the infant to this particular feeding should be carefully studied.

The point to be aimed at is the provision of proper nourishment for the infant, both in quality and quantity. In most cases of failure in feeding the fault lies in the kind, rather than in the amount of the feeding.

When pasteurized cow's milk is acidified by the addition of lactic acid, the milk becomes approximately as digestible as breast milk, and

can be fed safely without dilution even to young infants, to stomach capacity. During the past four years I have been using lactic acid milk in the above-named infants and have had the most gratifying results. Babies who at three months weighed only eight pounds gained as high as eleven, and sometimes sixteen ounces a week. The mothers, after making the rounds of a number of physicians' offices, were surprised at the large gains.

Lactic acid milk is a reliable tool for the physician in the feeding of infants. Many infants will thrive on lactic acid milk when other foods fail to produce the required gain in weight. Lactic acid milk would quickly come into general use if a number of physicians did not consider it difficult to prepare at home. The average mother will readily prepare this milk if she is given the proper directions. Of course powdered lactic acid milk is now available. It is uniform in composition and acidity. Fresh feedings can be made up each time baby is fed, and the preparation is comparatively simple.

In preparing the lactic acid milk one quart of milk is boiled for five minutes and then thoroughly cooled; the scum is removed, and one drachm of lactic acid U. S. P. (75 to 85%) is added drop by drop, while the milk is stirred. It is important that the milk should be thoroughly cold before the acid is added. After the milk is acidified, two ounces by volume of Karo syrup is stirred in, and the feeding bottles for the day are filled. The infant is offered as much as he desires at four-hour intervals. There is little or no danger of overfeeding on this type of formula. The bottles should be kept in a cool place but on account of its high acid content the milk keeps perfectly for one or two days, even at ordinary temperature, and is ready for feeding. The bottle is then shaken, warmed to body temperature and is ready for feeding. When using Karo syrup it is best to get the white crystal or red label syrup. This form of sugar contains a high proportion of difficulty fermentable dextrins, and, therefore, is the most difficult of the sugars to ferment, and less likely to cause diarrhea.

Generally one to one and one-half ounces of lactic acid milk per pound of baby's weight will meet the requirements of the average baby. It should be remembered that lactic acid milk sometimes causes vomiting at first, and therefore the mother should be warned. As this food is prac-

tically whole milk it is not necessary to give more than five feedings a day after the first month; many infants will gain on four feedings a day and will not wake up during the night. The same formula can be used throughout the first year with the exception that the sugar is decreased as cereals are added to the diet during the latter part of the first year. All infants should have orange juice and cod liver oil.

A few clinical reports follow:

Case 1. A child three months old, eight pounds in weight, with the characteristic symptoms of marasmus. Originally, a breast fed baby, on a formula of twenty ounces of milk, ten ounces of water and six teaspoonsful of sugar. I put the baby on lactic acid milk. Within three weeks the child gained thirty-two ounces and assumed the appearance of a normal child.

Case 2. A baby five months old, 13 pounds in weight, who had been under-developed, and whose glands were enlarged. I decided to try lactic acid milk. At the end of the seventh month the enlargement of the glands had entirely disappeared. Baby weighed 16½ pounds and had the appearance of any normal child of 7 months.

Lactic acid milk produces quicker gains in weight than other foods. It is less irritating to the baby's delicate gastric mucosa, and therefore can be given in amounts to make a satisfactory gain in weight. Lactic acid milk is coming more and more into use in the feeding of infants with nutritional disturbances, and just as one would be regarded as a poor doctor who refused to employ the stethoscope or take the pulse, one must likewise be considered careless or indifferent, who at this day refuses to accept the newer methods of infant feeding.

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CARCINOMA OF THE DUODENUM, REPORT OF CASE*

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Carman,¹ discussing the causes of duodenal deformity says, "Cancer of the duodenum is so rare that it should be thought of last of all."

*Read before the Section on Radiology, Illinois State Medical Society, Peoria, May 23, 1929.

He reported five cases in four thousand operative cases of duodenal ulcer.

In the Oxford System of Medicine, 1927, we find the following: "Since carcinoma was said to be non-existent in the duodenum, the few cases actually observed have excited particular attention. Doubtless inflammatory growths are mistaken for carcinoma."

McGuire and Cornish² in 1920 estimate, from a collection of hospital reports of the world, that there is about one duodenal carcinoma to three thousand autopsies.

Geiser,³ reviewing the German literature, found seventy cases of duodenal carcinoma reported.

Eusterman, Berkman and Swan⁴ in 1925 report fifteen cases which had been studied at the Mayo Clinic.

The above references show that duodenal carcinoma, while rare, probably exists more frequently than has been heretofore supposed, and since this is true, we should keep it in mind, as I believe we miss the diagnosis simply because we are not looking for it. With the idea that every case reported will perhaps stimulate others to look for it, I wish to report the following case, first, confessing that I missed the diagnosis.

The patient whose case I wish to report was a physician, male, aged 64 years. He was admitted to the Decatur and Macon County Hospital, August 14, 1927. He had fainted while in the bath room of his home, and since he had been treated for duodenal ulcer, his son who is a physician, thought he probably had a hemorrhage and sent him into the hospital.

He had first noticed his trouble about five years ago, when he had also fainted while in the bath room. He soon recovered and paid no attention to the attack, although he remembered that the stool had been dark colored.

Three years ago he had another fainting attack, and this time went to Chicago for an examination. The physician at that time told him he had a duodenal ulcer and advised him not to have an operation. He was put on a diet and did very well until the attack which brought him to the hospital.

At this time he was jaundiced and had been for three months. He complained of weakness, dizziness and severe itching. The jaundice began in May and had gradually increased. He thought his weakness was due to bleeding of the duodenal ulcer.

Physical examination shows the sclera to have a yellowish tinge, lungs negative, heart slightly enlarged with a definite systolic murmur transmitted to the axilla. Abdomen shows slight tenderness in

the upper right quadrant. No tumor mass felt. No glandular enlargement.

August 15. Temperature 102; pulse 100; blood count—Erythrocytes 3,570,000; leucocytes 11,800; hemoglobin 50. Urinalysis negative. Examination of the stomach content shows total acidity 50; free hydrochloric acid 21; blood present. Feces examination shows occult blood, although the stool is clay colored.

August 22. Blood count—Erythrocytes 2,790,000; leucocytes 11,200; hemoglobin 40.

August 27 to Sept. 2 he was given transfusions; 500 cc of blood being given each time.

September 23. Blood count—Erythrocytes 4,200,000; hemoglobin 65.

On August 23 we had done an x-ray examination of the gastro-intestinal tract, and reported as follows: Duodenal cap shows a constant deformity in both the fluoroscopic and radiographic examinations. The second and third portions are always well filled, slightly displaced to the right, and shows a slight narrowing in the lower part of the second portion. Barium enema shows a normal colon. The gall-bladder is partially filled after administration of tetraiodophenolphthalein, and was even in density.

The x-ray diagnosis of duodenal ulcer, cholecystitis and cyst of the head of the pancreas was made.

September 9 an exploratory operation was done and a mass as large as a baseball was found in the head of the pancreas. There were a few nodules on the liver, old scar in the first portion of the duodenum, gall-bladder large.

The patient gradually grew weaker and died September 30.

A postmortem was done and the pathologist reported as follows: Stomach negative.

Duodenum shows a ragged ulcer about two cm in diameter, three inches from the pylorus. It is very red and seems to have small ruptured blood vessels on the surface. The second and third portions are thickened. Microscopical examination shows columnar, glandular epithelial cells arranged in dense irregular shaped alveoli.

The liver has a few light areas on the surface, which on section show spindle cells arranged in alveolar formation.

The pancreas has a large tumor mass in the head, which on section shows columnar cells arranged in alveolar formation. These appear like the cells seen in the duodenum.

Pathological diagnosis: Adenocarcinoma of the duodenum with metastases into the liver and pancreas.

According to Ewing⁵ there are three distinct forms of carcinoma of the duodenum. 1. Carcinoma following ulcer. 2. Carcinoma of the papilla of Vater. 3. Carcinoma of the third portion.

Carcinoma following ulcer has been reported in 10 cases. In these the gross anatomy and

symptoms are similar to those of pyloric carcinoma, and in one of the cases reported by Eusterman, Berkman and Swan this diagnosis had been made. Stenosis and adhesions are usually present and metastases are frequent and wide spread. Coupland⁶ reports a case where there were metastatic areas of carcinoma in the bile ducts. In the series reported by Dewis and Morse⁷ there was metastasis in three of the twelve cases. Invasion of the pancreas is more common and may be extensive.

Carcinoma of the second portion usually arises about the papilla of Vater. Jaundice is therefore an early symptom. Dilatation of the biliary and pancreatic ducts commonly occurs. The structure is usually that of a cylindrical cell adenocarcinoma, derived from the intestinal mucosa.

Carcinoma of the third portion is more rare. Most of these take the form of a broad, flat ulceration with stenosis. Fenwick reports a case of this type where the ulcer extended over 8 inches of the mucosa. When there is a stenosis there is a dilatation of the stomach and duodenum and gastric symptoms predominate. In these cases there is usually bile in the stomach content. Icterus is absent. It is of interest to note that in four of the cases in the series reported by Eusterman, Berkman and Swan, the diagnosis of large gastric residue, gaping pylorus and distended duodenum was made.

The clinical symptoms will depend on the location of the growth. Thus, with carcinoma of the first portion symptoms similar to carcinoma of the pylorus are common.

If the involvement is in the second portion, we are more apt to get signs of an obstructive form of jaundice, and the picture can hardly be distinguished from carcinoma of the pancreas.

With the involvement of the third portion the symptoms are common to malignant pyloric obstruction, except that there is no palpable mass and the vomitus is more profuse and contains bile.

The onset is usually fairly abrupt and pain as a rule is not severe. In a majority of cases, the pain, when it does occur, appears in from one to four hours after meals. Pain was not a marked symptom in our case. Flatulency, retention type of vomiting, dehydration and toxemia are common symptoms. Jaundice is

rare except in cases where the second portion is involved.

Low free hydrochloric acid seems to be a frequent finding and is mentioned by Ewald⁸ as occurring in his case where the carcinoma was 2 cm below the pylorus. Eusterman, Berkman and Swan found absence of hydrochloric acid in six of their cases, and a low acidity in the others. Dewis and Morse stress this point in reporting their cases, especially as a differential diagnostic aid. They say, "We have never seen a simple duodenal ulcer co-existent with continuous absence of free hydrochloric acid, but this is the rule with duodenal cancer."

The x-ray findings are indefinite. In the series reported by Eusterman, Berkman and Swan a diagnosis of duodenal ulcer was made in one case; lesion at the outlet of the stomach with retention, one case; large gastric residue, gaping pylorus, distended cap, four cases, operative gastric cancer, one case, and negative, two cases.

The average duration of life is about seven months, the extremes ranging from three to eighteen months.

A most complete and excellent article was written by Dewis and Morse reporting a case of their own and eleven other proven cases, with a complete summary of the literature to date. I am quoting rather fully from their conclusions.

1. Duodenal carcinoma usually occurs in the sixth decade of life, the youngest patient recorded as having had the disease was 23.

2. Little evidence is ever found that they ever arise in pre-existing benign duodenal ulcers.

3. Obstructive symptoms of duodenal carcinoma are more rapid in onset than those of pyloric carcinoma.

4. Primary carcinoma of the duodenum usually obstructs the bowel; primary carcinoma of the papilla of Vater seldom obstructs it.

5. Abrupt appearance of gastric stasis in a patient past middle life suggests cancer of the duodenum. The absence of free hydrochloric acid in the stomach confirms the diagnosis.

6. Bile will be found in the gastric content when the obstruction is below the ampulla of Vater.

7. Perforation of the bowel at the site of carcinoma may be the first symptom observed.

An apparent example is the first case ever recorded—Hamberger's case in 1746.

8. Blood is present in the stools except in the rare cases of scirrhus carcinoma.

9. Perforation of a duodenal ulcer, occurring in the absence of chronic symptoms of indigestion, is suggestive of cancer, especially if the patient is over 60 years of age.

The following conditions should be kept in mind in making the differential diagnosis, as their findings are in some respects so similar to duodenal carcinoma.

1. Pyloric stenosis due to carcinoma.
2. Obstruction as result of pressure of other malignant processes, such as carcinoma of the head of the pancreas.
3. Carcinoma of the gall-bladder.
4. Adhesions causing obstruction.
5. Benign tumors.
6. Membranous stenosis.
7. Arteriomeseenteric occlusion.

Now it may be that, due to the varied pathology of carcinoma of the duodenum, x-ray diagnosis can never be made with any degree of certainty. In reviewing the literature one is surprised at the diagnoses given by the roentgenologists. So far as I have been able to ascertain, there is no x-ray sign which could be considered as being diagnostic for carcinoma of the duodenum. In my own case I feel this is true, especially since the patient had a duodenal ulcer which would undoubtedly give some x-ray evidence. This ulcer was probably active, and so far as the pathologist could determine had no connection with the carcinoma.

It would seem that the obstructive type would give the most constant findings, and if taken in connection with the history and physical condition of the patient might warrant a diagnosis of carcinoma. It will be in the carcinoma of the first portion and the papilla of Vater that the x-ray diagnosis will meet with the most difficulties, as in the first the signs will resemble carcinoma of the pylorus and in the other there may be no x-ray evidence of pathology in the duodenum at all.

My object in presenting this case is to encourage a closer study of duodenal carcinoma, especially from the x-ray standpoint. I offer no excuse for missing the diagnosis of my case except that I did not give carcinoma the consideration it deserves. I believe it is only by

being constantly on the alert that we can hope to improve our percentage of correct diagnosis in these cases.

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THE NATURAL DEFENSIVE POWER OF THE BODY AGAINST DISEASE*

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CHICAGO

The body possesses a natural defensive mechanism against disease. This is well known to every one. We speak or write of a natural resistance or an increase in our resistance to disease. Conversely special susceptibility to disease is a common term in medical and lay literature. If we ask ourselves just what is meant by natural resistance or increased susceptibility, the answer is vague and will differ with various individuals. Our commonly accepted idea of a pathogenic or disease-producing bacteria is one that can invade the body and maintain itself after invasion. This involves a two-sided reaction—microbic organism and the human host. In the practical aspects of the control of communicable diseases we use two fundamental methods; first, the restriction of the distribution of disease-producing bacteria; second, we attempt to increase the resistance of the host against these bacteria. It can readily be seen that isolation, quarantine, concurrent disinfection, purification of water supply, proper sewage disposal, clean milk and food, etc., all come under the first factor, namely, diminishing the distribution of the pathogenic microbe. Active

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immunization has been our best tool to increase the resistance of the host to disease. In emergencies, passive immunization has been of aid in diphtheria and tetanus.

We wish to deal with natural resistance to disease in this paper. The whole body is enclosed in a continuous covering layer. The morphological structure of this layer may differ upon certain body surfaces; such as skin, nasal mucous membrane, oral mucosa, epithelial lining the trachea, bronchii and alveoli of the lungs, mucous membrane of the stomach, intestine, and the various other body coverings.

It is difficult to find any body covering to be free of all viable bacteria. There are some living bacteria upon our body surfaces. These bacteria form definite communities of microbic life and live in perfect harmony with the adjacent epithelial layer. We speak of these communities as the endogenous bacterial flora of that particular zone of the body surface. The large intestine has a rich and varied bacterial flora upon its covering epithelium.

We began our studies by examining the bactericidal power of the various levels of the alimentary tube. The gastric contents is bactericidal by virtue of its acidity. We have not found any other factor than the acid to be involved in the bacterial killing power of the stomach. It is some minutes to even an hour or more after food is ingested before the acid concentration is enough to be of bactericidal significance. During this period of time the stomach empties part of its contents into the duodenum. This material contains viable bacteria. These bacteria are destroyed in the small intestine. When bacteria are placed directly in the small intestine they are rapidly destroyed. This self-disinfecting power that the small intestine exercises over the bacterial life within its lumen has been studied in our laboratory for the past five years. So long as ingested bacteria are destroyed inside the lumen of the upper half of the alimentary tract, it is a natural protection against disease produced by these bacteria. The contents of the digestive tube is outside of the body, hence any sterilizing action would be similar to a destruction of the bacteria outside of the body.

We have determined that this self-disinfecting power of the upper half of the small intestine upon its contents can be changed by certain con-

ditions. Among the various factors investigated, climatic changes seem to play an important role. The problem of the natural defensive power of the body against disease involves a study of some of the fundamental factors of the physiology of the organism. We are constantly receiving stimuli from the outside world. Light, heat, cold, humidity, wind, barometric pressure and many other component parts of our meteorological environment are stimuli that reach us through our body surface coverings and through the involuntary nervous system cause changes in physiological function. The healthy individual is one that has a perfect system of adaptation to these various stimuli. If the stimuli are too intense or if the individual for some reason cannot adapt himself to ordinary changes in stimuli, then dysfunction or ill-health became manifested.

We can insulate and train our bodies to be adapted to cool and cold climatic conditions. Artificial heating and ventilation during our indoor life is under our control. Food can be varied at will, such as an increase in fats and other high caloric foods. The problem of body economy during cold weather is to increase heat production and adjust by artificial means our heat loss. We are not so fortunate in hot weather. It is difficult for us to lose heat when the air around our bodies is about as warm as our skin. It then becomes a matter of reducing heat production and increasing loss. We can adjust our diet to this condition. The hot weather is associated with a greater change in the self-disinfecting power of the intestinal tract than cool weather. When the skin system becomes very active in eliminating heat, the digestive tract becomes relatively less active than it would be in cool weather. There is a diminution in gastric secretory function, there is a tendency toward a change in the reaction of the contents of the duodenum and jejunum toward the alkaline side. Ingested bacteria are no longer destroyed. One of the big natural defenses of the body against gastro-intestinal diseases is markedly interfered with and at times totally inhibited. These changes in the host as a result of imperfect adaptation to a hot environment play an important role in the summer intestinal diseases, such as typhoid fever, infectious diarrheas, etc.

Fecal typhoid carriers are biliary carriers.

The *B. typhosus* eliminated in the bile appears in the feces. If the self-disinfecting power of the upper half of the small intestine was normal, one would expect few, if any, *B. typhosus* to reach the large intestine in a viable condition. Typhoid carriers may be more persistent carriers in summer than in winter due to an intermittent interference with the auto-sterilizing action of the intestinal tract. Cooks and such people that work in hot and humid rooms form most of our typhoid carriers.

Without going farther into this question, we can readily see that the self-disinfecting power of the intestinal tract upon its contents is an important natural defensive mechanism of the body against certain disease-producing bacteria.

We have recently extended our studies of the self-disinfecting power of body surfaces to the nose and skin. Bacteria sprayed into the nose are rapidly destroyed. At least 95 to 98 per cent. are rendered non-stainable and non-viable within five minutes. *Staphylococci*, *B. prodigiosus*, *B. pyocyaneus* and *B. coli* have been used in these experiments. Repeated application of the bacteria upon the nasal mucous membrane does not in any way exhaust this self-disinfecting mechanism. This may in part explain why we have all been unsuccessful in transmitting upper respiratory diseases by spraying bacteria of various kinds into the nose of healthy people.

Bacteria placed upon the skin are quickly destroyed. The palmar surface of the hand is most effective in killing bacteria. *Staphylococci* disappear slower than *B. coli*. From our experimental evidence we are led to believe that the factors producing a simple and common boil are indeed very complicated.

These observations upon the natural defenses of the body against bacterial invasion have been extended to include the rate of disappearance of bacteria when injected into the blood stream. Dogs have been used for this work. Bacteria disappear rapidly in normal animals. The curve of the rate of disappearance is similar to that found in the nose and upon the skin. When an animal goes into shock (lowering of blood pressure, rapid shallow respiration with vomiting), during the course of such an experiment there is a sudden appearance within the blood stream of viable bacteria. As will be seen from one of

the accompanying graphs, the bacteria had apparently almost disappeared and then during shock they reappeared in large numbers for a short period of time. It is difficult to explain this upon the theory of phagocytosis. We are taught to believe that bacteria are removed from the blood stream by being engulfed within endothelial cells in the big capillary beds of the body. We do not have evidence to disprove this theory, but inasmuch as the rate of disappearance of intravenously injected bacteria is similar to that of bacteria placed upon the body surface, we are inclined to believe that a similar biological phenomenon is taking place in each instance.

Our work is by no means complete; in fact, we have just begun. When a body has the power of instantly killing bacteria placed in contact with it, this phenomenon must be associated with a natural defensive reaction. Judging by our gastro-intestinal bactericidal studies, we should look for changes in the host to account for the loss of the body surface to defend itself against an invader. Bacteriology does not lose its importance as a factor in preventive medicine and public health, but the host increases in its importance as a link in this chain.

DISCUSSION

Dr. Thomas G. Hull, Springfield: In the control of contagion we have had two methods which we mainly rely upon. One has been artificial immunization, such as in smallpox, typhoid fever, etc., but this is rather limited. There are only a few diseases for which we have developed satisfactory immunization agencies; the other is segregation, quarantine if you will, although the quarantine does not mean exactly what it did once. Segregation has its drawbacks, as we have heard in the discussion of measles, and where the damage is done before the child is segregated.

We have a third method, as Dr. Arnold suggested, of an adaptation of the host to his environment. This is not entirely new. We have been using it in tuberculosis and in infant diarrheas of children, where we have adapted the individual to his environment, to his climate as he has led a healthy existence.

Now Dr. Arnold has studied the factors which govern this adaptation of the hospital. While we were pretty much in the dark before, where we were sending the patient to the mountains or dryer climate not knowing exactly why, except that he got well, now we know that the adaptation of the patient through the intestine, through his outer skin and through his mucous membranes and nose and throat are all very important. Would that we could some day entirely neglect segregation and substitute for it "adaptation."

IN A STUDY OF CESAREAN SECTION MORTALITY IN INDIANAPOLIS

in J. Indiana State Med. Ass., April, 1929, David L. Smith, M.D., makes the following statements:

"One obvious means of reducing Cesarean section deaths is the elimination of needless Cesarean sections.

"Too many Cesarean sections are still being done on two classes of women, namely, those with borderline pelvis, and second, eclamptics.

"Eclampsia per se as an indication for Cesarean section is bad obstetrics. . . . Erdley Holland in his classic review in Great Britain and Ireland from 1911 to 1920 gives Cesarean section mortality on eclamptics as 32 per cent . . . while Welz gives 42.7 per cent as the death rate following Cesarean section on eclamptics in Detroit in 1925.

"In contrast to these high death rates, consider Straganoff's report in 1911 of 600 cases of eclampsia treated conservatively with only eight percent mortality, the Dublin report of 204 cases with a ten per cent mortality and Hastings Tweedy's eighty-three cases of eclampsia treated conservatively at the Rotunda Hospital with seven per cent mortality. On the average, then, three times as many eclamptics die following Cesarean section as do following conservative treatment."

WATERMELON-SEED EXTRACT IN THE TREATMENT OF HYPERTENSION

Drs. T. L. Althausen and Wm. J. Kerr, in the Am. J. Med. Sci., Oct., 1929, reach the following conclusions:

"1. Cucurbocitrin (extract of watermelon or pumpkin seeds) therapy in hypertension causes considerable lowering of the blood pressure, and gives complete or marked relief of symptoms in a majority of cases.

"2. Patients under the age of fifty years, with a known duration of hypertension of less than three years, and having little cardiovascular damage, are most likely to respond favorably to cucurbocitrin.

"3. The effects of cucurbocitrin and liver extract in hypertension are essentially alike in kind as well as in degree and apparently both are based on sustained peripheral vasodilatation."

POSTURAL TREATMENT OF POST-OPERATIVE MASSIVE ATELECTATIC COLLAPSE

C. G. Dyke, M.D., and M. C. Sosman, M.D., in the December number of Surg. Gynec. & Obst., tell us the cause of post-operative massive atelectasis; also its treatment by keeping the patient in the horizontal position, turned on the sound lung and encouraged to cough gently. This is to be followed by hyperventilation of the lung by carbon dioxide and oxygen for the next 24 hours, together with frequent changes of posture.

Society Proceedings

ADAMS COUNTY

The annual business meeting was called to order December 9, at 8:20 P. M. by the president, J. W. E. Bitter. Dr. Harold Swanberg gave a brief report concerning the 1929 meeting of the Radiological Society of North America held at Toronto. This was followed by a report of the 1929 meeting of the Associated Anesthetists of the United States and Canada, held in Chicago, by Dr. R. A. Harris.

Following this, the chairmen of the various committees and officers made brief reports.

After discussion on the question of abolishing the Council of the Society, Dr. Koch introduced the following resolution: "Be it resolved, that it is the sense of this meeting of the Adams County Medical Society, that the Council be abolished and that we carry on the business of the Society before its regular monthly meetings, and the by-laws be so amended."

The annual election resulted as follows: President, J. F. Ross; first vice-president, W. A. Trader; second vice-president, A. J. Blickhan; treasurer, J. A. Koch; secretary, Harold Swanberg; medico-legal member, Ralph McReynolds; councilors for two years, J. A. Koch, A. M. Austin and Grant Irwin; censor, C. A. Wells; library committee, E. B. Montgomery.

The Society appropriated \$100.00 for the publication of the BULLETIN for 1930, and the secretary was given a rising vote of confidence for the manner in which the BULLETIN has been published heretofore.

The meeting place of the Society for 1930 will be at the Elk's Club, and the January meeting will be a social membership meeting, limited to the membership of the Society, and be placed in charge of the Entertainment Committee.

HAROLD SWANBERG, M. D.,
Secretary.

ALEXANDER COUNTY

The Alexander County Medical Society held its last meeting of the year at the Halliday Hotel Tuesday evening. The time between 8 and 9 o'clock was devoted to a business session, during which officers for the ensuing year were elected. Dr. James W. Dunn, president, presided over this session. The report of the secretary disclosed that the society had enjoyed a successful year, with a great deal accomplished in the line of organization, programs, and attendance.

The election of officers resulted in the following choice: Dr. Phil McNemer, president; Dr. James Woelfle, vice-president; Dr. James Dunn, secretary. Dr. James M. Gassoway was elected to the board of censors for a period of three years. Dr. Flint Bondurant was elected a delegate to the Illinois State Medical Society meeting, with Dr. Jas. Johnson as alternate.

Guests of the society members were Drs. Lee of Charleston, Mo., Drs. Hudson, Elkins, and Rife of Mounds and Dr. James Templeton of Pinckneyville, Ill.

Following the business meeting a six-course dinner was served in the blue room of the hotel. Dr. B. S. Hutcheson acted as toastmaster and introduced Dr.

Jas. Templeton of Pinckneyville, councilor for the tenth district, whose subject for the evening was "Medical Organization." Dr. Templeton traced the development of medicine and medical organization back to its foundation. In this address he pointed out the advantages of medical organization and the progress made in that line in the state of Illinois.

Dr. Dunn, retiring president, made an eloquent address on the "County Society as a Foundation of Medical Organization," in which he urged loyalty to, and support of the county society. Following Dr. Dunn, the president-elect for 1930 extended his thanks and appreciation for the honor paid him and a round table discussion followed the speakers. A vote of appreciation was tendered J. W. Walsh, manager of the Halliday Hotel, for courtesies extended during the year, as well as contributing to the success of the evening.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Joint Meeting With the Illinois and Chicago Societies of Industrial Medicine and Surgery, Dec. 4, 1929

Fracture of the Forearm and Wrist, with Lantern Slides. P. A. Bendixen, Davenport, Iowa.

Discussion: Allen B. Kanavel; Don Deal, Springfield, Illinois; W. R. Cubbins, R. R. Duff, Hollis Potter.

Multiple Fractures of the Pelvis with Dislocation of Head of Femur, with Lantern Slides. Clarence W. Hopkins.

Discussion: H. E. Mock; F. N. Cloyd, Danville, Illinois; S. B. MacLeod, Edson B. Fowler, Hollis Potter.

Regular Meeting, December 11

Some Phases of Plastic Surgery. F. B. Moorehead, Professor of Oral Surgery, Rush Medical College of the University of Chicago.

Regular Meeting, December 18, 1929

Maternal Mortality. Professor Marshal Allan, Professor of Obstetrics, University of Melbourne, Melbourne, Australia.

Prevention and Cure of Septicemia by a New Method of Wound Treatment. Dr. H. Winnette Orr, Lincoln, Nebraska.

EFFINGHAM COUNTY

The Effingham County Medical Society met on December 5, 1929, to hold their annual election of officers. The following officers were elected: President, A. E. Goebel, Montrose; 1st vice-president, H. Heuck, Sigel; 2nd vice-president, H. A. Long; secretary, C. H. Diehl; treasurer, S. F. Henry; delegate, F. Buckmaster; alternate, C. H. Diehl, all of Effingham; censors (1 year), S. C. Lorton, chairman, Shumway; (2 years), C. C. Holman; (3 years), T. F. Reuther; legislative committee, Dr. C. H. Diehl, all of Effingham; medico-legal committee, Dr. Harry Schumacher, Altamont.

The Society voted to have a talk on Current Events in Medicine at each meeting during the coming year in addition to their regular scientific program.

The last meeting for this year was on Dec. 12.

C. H. DIEHL, M. D.,

Secretary, Effingham County Medical Society.

IROQUOIS COUNTY

The Iroquois County Medical Society met in regular session at the Nurses' Home, Watseka, Tuesday evening, December 10, at 7:30 o'clock.

The meeting was called to order by Vice-President Hedges. Minutes of the previous meeting were read and approved.

The following officers were elected for the coming year: President, A. L. Hedges; vice-president, E. L. Roberts; secretary-treasurer, C. H. Dowsett; delegate, E. L. Roberts; alternate, W. N. Whitsitt; censor for three years, H. W. Wood.

A scientific motion picture was then shown, showing first the Movements of the Elementary Tract in Experimental Animals and one showing the Influence of Drugs on Gastro-Intestinal Motility.

Dr. John Harger of Chicago was then introduced and read a very interesting paper on "Diagnosis and Treatment of Acute Intestinal Obstruction."

Dr. Geo. W. Ross led the discussion which was entered into with lively interest.

A rising vote of thanks was tendered Dr. Harger and Dr. Goldwater and Mr. Gould who showed the motion pictures.

Meeting adjourned about 10 P. M. when oyster stew was served a la cafeteria by the nurses dressed as Santa Clauses.

This meeting was pronounced as one of the most enjoyable and profitable of the year.

C. H. DOWSETT, Secretary.

MADISON COUNTY

The Madison County Medical Society elected officers for the year 1930 as follows: President, Groves B. Smith, Alton; vice-president, C. E. Molden, Troy; secretary, D. D. Monroe, Edwardsville; treasurer, R. S. Barnsback, Edwardsville; state delegate, M. Pfeifferberger, Alton; alternate state delegate, Mather Pfeifferberger, Alton; medico-legal member, E. C. Ferguson, Edwardsville; censor, C. R. Kiser, Madison.

D. D. MONROE, Secretary.

PEORIA SOCIETY

Peoria Medical Society elected the following officers at the annual meeting: President, Wm. Major; 1st vice-president, W. C. Williams; 2nd vice-president, John Vonachan; secretary-treasurer, C. W. Magoret; delegates, R. L. Green, George Weber; alternates, Hugh Cooper and S. Eaton, all of Peoria.

Marriages

PHILIP H. DORNE to Miss Ruth Helen Kramer, both of Chicago, November 17.

CLAYTON FINDEIS HOGEBOOM to Miss Genevieve Merriam Borgers, both of Chicago, December 17.

EDWARD M. IRWIN to Miss Emma Guenther, both of Belleville, Ill., in November.

JOSEPH K. NARAT, Chicago, to Miss Mitzi Loose of Los Angeles, recently.

CAESAR PORTES to Miss Rose Rubenstein, both of Chicago, November 28.

Personals

Dr. George Rubin has been elected commander of the Chicago Medical Post number 216 of the American Legion, succeeding Dr. Patrick J. H. Farrell, who has held that position for a number of years.

Dr. Frank A. Lagorio, who is associated with his father at the Chicago Pasteur Institute, has been made a chevalier of the Order of the Crown of Italy by King Victor Emanuel for work among Italians in Chicago.

The Chicago Council of Medical Women will be addressed, January 3, at the Medical and Dental Arts Club by Drs. Clara Jacobson on "Treatment of Early Tuberculosis," and Caroline Hedger on "Positive Health."

Dr. Joseph B. De Lee presented a "motion picture with movietone in eight reels on laparotrachelotomy, low cervical cesarean section," before the regular meeting of the Chicago Gynecological Society, December 19, at 8 o'clock.

Dr. Leon H. Martin, who since 1925 has been director of public health and welfare of Fort Worth, Texas, has taken up his duties at Jacksonville as superintendent of the Oak Lawn Sanatorium and as city and county health officer, succeeding Dr. Warner H. Newcomb, resigned.

Dr. Lucius H. P. Zeuch addressed the Chicago Historical Society, 632 North Dearborn Street, December 6, on "Pioneer Physicians and Shrines of Western Medicine." Dr. Zeuch is the author of the recent "History of Medical Practice in Illinois: Volume I, Preceding 1850," published by the Illinois State Medical Society.

News Notes

—Rush Medical College held its annual faculty-student reception December 6.

—About 500 bookplates, lent by American and European physicians and medical institutions, are on display daily at the library of the University of Illinois College of Medicine, 1817 West Polk Street.

—The dental clinic at Cook County Hospital

celebrated its sixth anniversary, November 25. Children during the last year made about 21,000 visits to the dental clinic. Among these were 2,200 who came for the first time.

—At a meeting of the board of governors of the Institute of Medicine of Chicago the following officers were elected for the ensuing year: president, Dr. George E. Shambaugh; vice-president, Dr. John L. Porter; secretary, Dr. George H. Coleman, and treasurer, Dr. John Favill.

—The Chicago Pathological Society was addressed, December 9, by Dr. M. P. Neal and Max M. Ellis, Ph.D., Columbia, Mo., on "Experimental Fat Necrosis and Isolation of a Causative Factor;" Paul J. Breslich, "Squamous Cell Carcinoma of the Trachea," and Milton G. Bohrod, "Polypoid Pericarditis."

—The Chicago Medical Society was addressed, December 4, at a joint meeting with the state and city societies of industrial medicine and surgery by Drs. Peter A. Bendixen, Davenport, Iowa, on fracture of the forearm and wrist, and Clarence W. Hopkins on multiple fractures of the pelvis with dislocation of the head of the femur.

—The University of Chicago dedicated the George Herbert Jones Laboratory for graduate research work in chemistry, December 16-17, with a scientific program on the general topic "Some Present and Future Problems of Chemistry."

—The Chicago Pediatric Society was addressed, December 17, by Drs. George E. Shambaugh on "Some Observations on Ear Diseases in Children;" John J. Theobald, indications for paracentesis and treatment of acute middle ear infections in children, and Joseph Brennemann, "Acute Middle Ear Infections in Infants and Young Children from the Standpoint of the Pediatrician."

—The department of medicine of the University of Chicago has beds set aside in the Albert Merritt Billings Hospital for the study of pneumonia to which patients may be admitted free of charge if their financial circumstances warrant. The department of medicine holds clinical conferences at 4:30 p. m., Wednesdays, at the University of Chicago Clinics; members of the Chicago Medical Society are cordially invited.

—The Chicago Surgical Society was addressed, December 6, by Drs. Willis D. Gatch, Indianap-

olis, on "Clinical Application of Recent Research Work on Intestinal Obstruction;" Kellogg Speed and Dean L. Rider on "Experimental Bone Healing After Parathyroidectomy;" Dallas B. Phemister and Eloise Parsons, "Shock and Hemorrhage in Injuries of the Extremities," and Sumner L. S. Koch on "Acquired Contractures of the Hand."

—At the fifty-sixth annual meeting of the North Central Illinois Medical Association, Lacon, December 3, under the presidency of Dr. Frank D. McNertney, El Paso, Dr. Arthur Sprenger, Peoria, spoke on "Prostatic Hypertrophy" with moving pictures; Dr. Elven J. Berkheiser, Chicago, on "Dislocations of the Cervical Vertebrae," and Dr. Samuel J. Burrows, Chicago, "Some Principles of General Surgery." There was a morning, afternoon and evening session. Dr. Andy Hall, state health commissioner, addressed a public meeting on health problems in Illinois.

—The Illinois Federation of Women's Clubs and the parent-teacher associations are organizing a campaign which will reach every precinct in Chicago for the purpose of advising parents to take their children to the family physician or, if destitute, to the state and city departments of health to have them immunized against diphtheria. Citizens will cooperate with the health department in carrying on educational work by means of posters and newspaper articles. An advisory committee of the Chicago Medical Society has recommended to the health commissioner that practicing physicians make the injections at \$1 each on Saturdays at hours which they may choose; the health commissioner, Dr. Arnold H. Kegel, desires that practitioners do this work. He has written all of them in Chicago outlining the work to be done and requesting their cooperation. It is estimated that there are about 500,000 children in Chicago to be immunized.

—A jury in Judge Hopkins' court, December 10, found W. H. H. Miller, former head of the state department of education and registration, guilty of conspiracy to sell medical and dental licenses to persons not qualified to practice. The sentence imposed was seven months and one day in jail and a maximum fine of \$2,000. The defense attorneys filed a motion for a new trial

which will be heard December 27. Miller, who was appointed to the foregoing position by Governor Len Small, was convicted in 1923, the *Chicago Tribune* says, of conspiracy to license pharmacists, at which time he paid a fine of \$1,000. The governor then demanded his resignation. Others under indictment in the Illinois diploma mill investigation are said to be Harry Goldstein, alias Senator Browsky, Springfield, "Dr." Robert Lentine of Springfield, "Dr." Morris Kalmus, a New York dentist, Albert K. Barron and Jacob Crane, the latter the printer who is said to have made the fake licenses. Dr. Robert Adcox of St. Louis was the chief state witness, telling of making various payments to Miller in behalf of students seeking medical license. Miller, who offered no defense to refute the state's evidence, is now a candidate for the Republican nomination for congressman at large.

—The three diseases, smallpox, diphtheria and whooping cough, are together causing from 600 to 800 fresh cases of illness weekly in Illinois. Prevalence of each is noticeably above the average even for this time of year. The trend of all is upward. Distribution is general throughout the State. Two months ago the weekly incidence was about 350. Now the figure is twice that number. Smallpox and diphtheria can be prevented by vaccination. Controlling whooping cough depends upon quarantine.

—All applicants for federal pilot licenses, either for flying or for training as pilots, must pass physical examinations before physicians designated by the Secretary of Commerce. They must likewise be re-examined periodically. These examinations cover a rather detailed examination of the eyes, a brief examination of the ear, nose and throat, equilibrium, a general physical examination and a detailed examination of the nervous system. There are now about 750 medical examiners so designated throughout the country. All these examinations are reviewed in Washington where the applicant is finally certified as qualified or disqualified for the grade for which he has applied.

Whereas. The department requires that all examiners hold the degree of Doctor of Medicine, be licensed to practice medicine under the laws of their respective states, and further requires that the appointees be recognized as ethical practitioners in their respective localities,

thereby supporting the high standards advocated by this Association, be it

Resolved, That the American Medical Association at its stated assembly in 1929 endorses the medical work of the Department of Commerce, its methods of physical examination and its method of selection of medical examiners, and urges that the same high standards be continued and offers the support of the American Medical Association in furthering the specialty of aviation medicine.

—A campaign to provide a \$3,000,000 medical center for Negroes is being launched on January 14, to run ten days, by the Provident Hospital and Training School in co-operation with the University of Chicago. The plan is to provide the most modern training school for Negro medical students and the most modern hospital for Negroes in America.

The high death rate of Negroes in Chicago has been attributed mainly to the fact that there have been no adequate facilities for the training of Negro doctors and Negro nurses.

Three million dollars is the minimum needed. Of that sum \$1,000,000 is required by the University of Chicago as a teaching and research fund. This has already been subscribed to the University by John D. Rockefeller through the General Education Board.

The remaining \$2,000,000 is needed by the Provident Hospital and Training School, of which \$750,000 has been subscribed through the Julius Rosenwald Fund and other groups. The remaining \$1,250,000 is to be raised in the general campaign.

The program of the Provident Hospital in co-operation with the University of Chicago will make possible high-grade care of Negro sick, instructions for Negro medical students, especially post graduates, increased number of internships for Negro doctors, advanced training never available heretofore, and opportunity for research on those diseases which present the gravest problems for the Negro race.

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Mrs. Overweight: Thank you so much, Doctor, but do I take this before or after meals?—London Passing Show.

Deaths

JOHN J. AEBERLY, Chicago; Bennett Medical College, 1895; a member of Illinois State Medical Society; aged 72; died, Dec. 1, from fracture of the skull, as the result of a fall at home.

ALFRED BARRADELL, Chicago; Chicago College of medicine and Surgery, 1913; aged 60; died, December 2, of diabetes mellitus.

WILLIAM FRANKLIN DEAN, Elmhurst, Ill.; University of Michigan Homeopathic Medical School, Ann Arbor, 1891; aged 68; died, October 6.

THOMAS ELMER K. DIHEL, Chicago; University of Louisville (Ky.) School of Medicine, 1893; aged 67; died, November 23, of chronic myocarditis.

HUGH HOVER, East Moline, Ill.; Hering Medical College, 1900; assistant staff physician at East Moline state hospital; aged 53; died, December 3, of pneumonia.

HERBERT LAWSON JORDAN, Chicago; Bennett Medical College, 1914; a member of Illinois State Medical Society; aged 48; died, December 13, of chronic myocarditis.

OLEN WINFIELD LOOKER, Rock Island Ill.; Keokuk (Iowa) Medical College, 1894; age 70; died in October, at Rochester, Minn., of heart disease.

WILLIAM O'CONNOR, Chicago; Starling Medical College, Columbus, Ohio, 1895; age 56; died, November 23, of arteriosclerosis and cerebral hemorrhage.

WILLIAM HALL RUPERT, Crystal Lake, Ill.; General Medical College, Chicago, 1908; a member of Illinois State Medical Society; aged 47; died, November 27, at Wilgus Sanitarium, Rockford, of acute delirious mania.

JOSEPH SANDAHL, Chicago; Jenner Medical College, Chicago, 1906; aged 71; died, August 19, of chronic myocarditis.

CHARLES HENRY SCHMIDT, Chicago; University of Illinois College of Medicine, 1905; a member of Illinois State Medical Society and City Health Officer for 24 years; aged 48; died, November 28, of cerebral hemorrhage, at Norwegian-American Hospital.

CYRUS HARVEY SMITH, Abingdon, Ill.; Rush Medical College, 1895; aged 60; died, November 29, after more than a year's illness.

ROBERT A. SMITH, Chicago; Rush Medical College, 1903; a member of Illinois State Medical Society; assistant professor of pathology at the University of Illinois from 1906 to 1913; a captain in Medical Corps during the World War; aged 49; died, December 15, of carcinoma of sigmoid.

BRYCE REX WINBGLER, Rock Island, Ill.; University of Illinois College of Medicine, 1904; former member of Illinois State Society; aged 51; died, November 20, of angina pectoris.

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¹J. Biol. Chem., 76:2. ²Ibid., 66:451.

³Ibid., 80:15. ⁴Ibid., 76:251.

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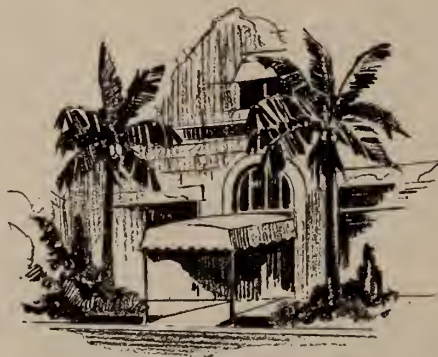
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ILLINOIS MEDICAL JOURNAL

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THE ILLINOIS STATE MEDICAL SOCIETY

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Send original articles, advertising copy, cuts and all communications relating to advertising to Dr. Charles J. Whalen, c/o Illinois Medical Journal, 185 N. Wabash Ave., Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

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Editorials

CHICAGO THE MEDICAL CENTER OF THE WORLD

Organized medicine in Chicago has the opportunity of a lifetime at hand. If taken by the proverbial forelock the city can be made the medical center of the world.

Work qualifying the city and its environs for this distinction is performed hourly all about us. Neglect to let others know of our capacities and performances will result in Chicago's slipping into a mere sub-station for outlying physicians to come for post graduate labors. Instead of being the medical center of the world, Chicago will soon cease to be even a rival for this supremacy in the United States, unless some action is taken.

Organized medicine in Cook County should assume the responsibility of cooperation and organization between the profession, the schools and hospitals and affiliated institutions to the end that the choate unit will be a forceful lever to bring about the "rendering unto Caesar of the things that are Caesar's."

Chicago should be the logical city for visiting physicians to come for supplemental study. The population is large. The city is beautiful.

There are four large medical schools with a wonderfully competent and efficient teaching staff. Here are all the ingredients. What is needed is the mortar and pestle to mix them.

A central office or clearing house can be maintained in Chicago where notices can be received and bulletined showing where clinics are being held, the work that is being done in colleges, hospitals and private clinics. This central bureau could advertise in national and other medical journals in this way getting the widest publicity possible as to what is being done in the world's medical center.

Cooperation from the institutions and the individuals, if organized and distributed prop-

erly, will go far towards placing Chicago at the head as a teaching center.

Another progressive step would be the organization of the professional labor done in Chicago so that our own members would have opened to them diagnostic and treatment clinics as well as especial clinics. In this way our own membership will make themselves more efficient physicians and surgeons.

This when analyzed would appear to be indubitably the inevitable and only way in which to overcome the propaganda of various cults and isms, and the so-called practitioners of bloodless surgery and medicine.

Along with post graduated work there would run a bi-monthly diagnostic clinic held on the south, the west and the north sides of Chicago under the auspices of the Chicago Medical Society. Our members would gain greatly therefrom.

These views are expressed for the purpose of creating discussion with the possibility in view that good may arise therefrom. Will those who are interested in the idea please place themselves on record by comment either favorable or otherwise?

It rests with the organized profession in co-operation with our universities, schools, hospitals and teaching institutions generally to put this great undertaking where it belongs on a plane of established success that will make Chicago a medical center and admiration for the whole world.

EXHIBITS AT THE 1930 ANNUAL MEETING

An interesting feature of the annual meeting is the large display of exhibits submitted by many reliable commercial concerns who have something to sell that the physician is interested in. During the past few years the Society has taken pride in the selection of these exhibits, permitting only ethical concerns to be represented at the meeting.

It is always a part of the general arrangements to arrange things suitable to the best interests of the exhibitor. Although it is not possible to give the choicest space to all exhibitors, the best possible arrangement to make each exhibit space a desirable one is attempted. A synopsis of all exhibits is given in the April

and May issues of the ILLINOIS MEDICAL JOURNAL, and the same is placed in the official program for the meeting, without additional charge to our exhibitors.

We are well pleased with the general arrangement of the exhibit hall this year, for the Joliet meeting, and the diagram of exhibit spaces is printed in this issue of the JOURNAL. The response to the first diagrams sent out this year were beyond expectations, and it is quite evident that all available spaces will be sold long before the meeting is held in May. We hope that all physicians who attend the annual meeting in Joliet will spend as much time as possible among the exhibits, to familiarize themselves with the many accessories of interest to the profession.

Any ethical prospective exhibitors interested in having a display at the Joliet meeting may procure a diagram, application and complete information on the subject by addressing the Secretary, Dr. Harold M. Camp, Monmouth, Illinois. It is hoped that all members of the Illinois State Medical Society will favor the exhibitors and also our advertisers, many of whom have favored the Society with their advertisements for many years.

FIRMS WISHING TO EXHIBIT AT ILLINOIS STATE MEDICAL SOCIETY

EIGHTEENTH ANNUAL SESSION

Joliet, Illinois, May 20, 21, 22, 1930

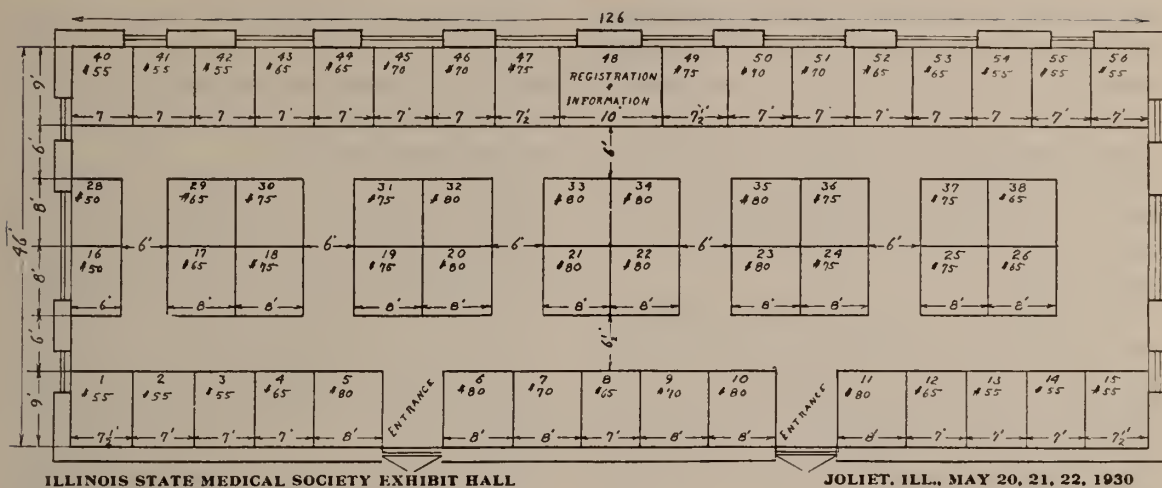
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Dr. Harold M. Camp, Secretary,
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You are hereby authorized to reserve for our use space in Exhibit Hall at the Joliet Session, 1930:

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.....agree to abide by all requirements and restrictions mentioned in this application.



REGULATIONS REGARDING EXHIBITS

In making application, please state by number, from the diagram, your first, second, third and fourth choice. Retain one diagram for reference.

All exhibits must be in place before Monday night, May 19th, and remain all of May 22nd. The exhibit room will be open on Tuesday, Wednesday and Thursday from 8 a. m. to 6 p. m. The Illinois State Medical Society will not guarantee exhibitors against loss of any kind. The Society does agree, however, to furnish a watchman at night as an aid to its exhibitors.

All firms making an exhibition will be mentioned, with a brief outline of exhibit, in the provisional program to be published in the *ILLINOIS MEDICAL JOURNAL* for April and May and also in the official program used at the session.

Both 110 and 220 volts of electric current are available for every booth. Tables and chairs will be available. Extra furnishings, rugs, lamps, etc., can be rented at a nominal rental.

No nails, screws or tacks shall be driven in the floor or walls. No bunting, paper or inflammable woodwork shall be placed against the wall or suspended from the booths. The floor shall be fully protected from the dropping of oil or other fluid.

No drug, chemical or similar preparation used in the treatment of disease can be exhibited which does not conform to the requirements of the Council of the Illinois State Medical Society.

No medical journal or publication can be exhibited that contains advertisements of drugs, chemicals or similar preparations used in the treatment of disease which does not conform to the rules of the Council of the Illinois State Medical Society.

No sub-letting of space will be permitted. Any person or firm sub-letting space, as well as the one purchasing such space, will be subject to eviction. No refund will be made for space ordered and once accepted.

We believe we have more to offer our exhibitors at this meeting than ever before in the history of this Society. The Joliet Chamber of Commerce is co-

operating 100 per cent and will aid exhibitors in every way possible.

IS THE COST OF HOSPITALIZATION REALLY THE HIGH COST OF HOSPITALIZATION?

A statistical report submitted recently states that on a survey made in 100 hospitals the average bill for the "first ten thousand full pay patients during the present fiscal year was \$71.99; that the average duration of stay per patient in fifty-two of these hospitals was 11.04 days."

Anybody accustomed paying household bills knows that from these figures the high cost of hospitalization quickly range itself with the general high cost of living, and the improved standard of living that have made the American people determined that since this is a race of kings the best is only about half good enough. Compared with what the population of the United States pays out annually for such pleasant but unnecessary luxuries as silk stockings, superexpensive habiliments, superexpensive household and business accessories, automobiles, radios, pianos and other elegancies of modern life, the price asked for the hospital's aid in saving life and preventing pain is far less than that asked for filling life with "whoopee" or making it pleasant.

It is nothing at all for many a family of the middle class to spend from \$40 to \$50 making "whoopee" at a night club. When it comes to paying \$40 or \$50 to a doctor or to a hospital immediately the howl goes up. The trouble is to some extent that persons seems to take for

granted that wonderful machine the body and to expect it to keep itself in repair. Shelter and clothing and even food are less of an essential to life than a body in healthy working order. No man expects his tractor, his automobile, or his electric milking devices to be automatic self-repairers. They do seem to think that the body should take care of itself and to resent paying for expert care.

Medical care in the minds of many otherwise sane individuals is regarded in the light of a gift from heaven and the generosity of divine dispensation. When the hospital in its modern phase first began to function a private room could be had at from \$25 to \$35 per week and a special nurse on twenty-four hour duty for \$25 per week. The public has expected hospitals to keep up this scale in the face of the more than doubled increase in the cost of labor, supplies, upkeep. Hotels and inns all over the country have raised their rates to preposterous heights. The public swallows the charge and lets it go, with the idea that after all the French phrase for hospital—"Hotel Dieu"—is really the right idea. This "hotel of God" can keep on living and going on Divine afflatus.

STATE MEDICINE COMING? NECESSARY RAW MATERIALS FOR A VAST SYS- TEM OF STATE MEDICINE OR ITS EQUIVALENT ARE TO- DAY LYING ABOUT US

Glenn Frank, president of the University of Wisconsin, in the *Chicago Daily News*, November 14, 1929, says:

Recently I had the privilege of discussing, before some 3,000 members of the American College of Surgeons, the threat of state medicine or its equivalent in the corporate medical activities of industries, insurance companies and the like.

I tried to face, with complete candor, the powerful private economic interests that are driving industries and insurance companies and the increasingly enlightened leadership of labor to wage organized warfare upon the staggering economic loss they must bear from preventable disease and postponable death.

It is undoubtedly true that all of the necessary raw materials for vast system of state medicine or its equivalent are today lying about us.

Will these raw materials be used to build a system of state medicine or will the medical profession display enough statesmanship to take the leadership in meeting the needs that will otherwise force state medicine?

Here is a question that calls for sincere and sustained thinking by doctors everywhere.

As a general principle I dislike to see any activity fall into the hands of the government—whether it be an activity of business or labor or agriculture or the professions—if such activity can be administered equally well or better by the trade or profession to which the activity logically belongs.

Society forever faces the dilemma of choice between an inner and an outer control of its fundamental services.

I prefer inner control, not because I am a reactionary who grows hydrophobic at the mere suggestion of government control, for I have rarely been accused of that, but because, as society becomes increasingly complex and technical, the man on the job should be better equipped for the job than the man on the sidelines. It is, I think, an intelligently progressive policy to say that we shall consider government control of any given fundamental service only when inner control breaks down.

State medicine will not come, in my judgment, if doctors generally display in the years ahead adequate sensitiveness to social values and adequate statesmanship in meeting social needs which, in matters of disease and death, now present such a serious problem to individual workers, to industries, to insurance companies and the like.

The doctors must excel industries, insurance companies and governments in their zeal for preventive medicine; they must humanize the science of the study of disease, linking the learning of the laboratory ever more closely to the life of mankind.

President Frank's address is published in full in "Surgery, Gynecology and Obstetrics," January, 1930.

WE TOLD YOU SO TWENTY YEARS AGO

In the issue of the ILLINOIS MEDICAL JOURNAL for September, 1911, the present editor prophesied the development of the present economic conditions confronting the profession.

This prophecy was repeated again in 1913, 1914, 1915 and reiterated again and again in public lectures and in editorials in the interval up to the present day. Medical journals all over the United States are now enlisting in this same fight for those rights of the medical profession that so drastically affect the public welfare. Foundations practicing medicine, corporations entering into the practice, also, university medical schools competing in practice with their own alumni, endowed and partly endowed institutions and pay clinics in the practice of medicine, and an adaptation of the "chain store idea" in medical practice and in hospitalization, lay dictation of medical practice, legislative fiat in the practice of medicine, overstandardization and too much centralization of power in Washington, in state capitals and other general governmental units, all these and hundreds of other similar menaces today occupy much editorial attention.

THE NEW SHEPPARD-TOWNER PROPOSED LEGISLATION IS KNOWN AS THE JONES-COOPER BILL

April 18, 1929, S. 255, was introduced by Senator Jones of Washington and referred to the senate committee on Commerce, and H. R. 1195 was introduced by Mr. Cooper of Ohio and referred to the house committee on Interstate and Foreign Commerce.

The essential features of the Jones-Cooper Bill are the same as those of the original Sheppard-Towner Act. It provides for a \$1,000,000 annual appropriation, to be administered by the Children's Bureau and expended in states which match on a 50-50 basis the federal funds available. Points of difference are no outright grants to states of \$5,000; \$15,000 reserved for the use of each state (which may accept the whole or any part).

All the objections to the old Sheppard-Towner Act apply with equal force to the Jones-Cooper Bill. We will be pleased to furnish literature on request.

The Illinois State Medical Society has from the first consistently opposed the Sheppard-Towner Act and similar menacing legislation.

Write your congressman to aid in the defeat of the Jones-Cooper Bill. Here is a vast field

for activities on the part of the Woman's Auxiliaries of the various state and local medical societies.

NEW LEGISLATION IS CONTEMPLATED FOR THE RESURRECTION OF THE SHEPPARD-TOWNER ACT

Those who are familiar with the deceptions and wolf in sheep's clothing attributes of the Sheppard-Towner Act that died in July 29, 1929, will be horrified that new legislation is contemplated that will again place this iniquitous burden on the backs of the taxpayers for the benefit of political jobholders, which if it is like its predecessors will not provide a single cent to buy a meal, or a shirt or rent a bed or shelter for a single needy mother or newborn child.

In the *United States Daily* under date of Jan. 10, 1930, appears this news story:

"After a conference with President Hoover at the White House on Jan. 9, Representative Cooper (Rep.), of Youngstown, Ohio, stated orally that he would introduce a bill in the House continuing the purposes of the Sheppard-Towner Maternity and Infancy Act along the lines of President Hoover's recommendation in his annual message to Congress, which was to confine the use of Federal funds under the act by the States to the building up of county or other local health units.

"Representative Cooper said he now has a bill pending in Congress to continue the purposes of the Sheppard-Towner Act, but added that as a result of his conference with the President he would offer a substitute bill not only continuing the purposes of the act but providing for the distribution of Federal funds by the Children's Bureau of the Department of Labor to the county boards of health.

"'There is tremendous interest all over the country in the legislation,' said Representative Cooper, 'but there is likewise considerable opposition to it.'"

For those unacquainted with the attitude of the national administration towards both worthy and unworthy national welfare work, the best elucidation of these policies can be found in these excerpts from the president's annual mes-

sage to congress that were culled from this message by the A. M. A. itself.

Some of these citations are:

THE PRESIDENT'S MESSAGE

SOCIAL SERVICE GIVEN IN PATERNALISTIC WAY

The federal government provides for an extensive and valuable program of constructive social service, in education, home building, protection to women and children, employment, public health, recreation and many other directions.

In a broad sense federal activity in these directions has been confined to research and dissemination of information and experience, and at most to temporary subsidies to the states in order to secure uniform advancement in practice and methods. Any other attitude by the federal government will undermine one of the most precious possessions of the American people; that is, local and individual responsibility. We should adhere to this policy.

Federal officials can, however, make a further and most important contribution by leadership in stimulation of the community and voluntary agencies, and by extending federal assistance in organization of these forces and bringing about cooperation among them.

CONFERENCE ON CHILD HEALTH

As an instance of this character, I have recently, in cooperation with the Secretaries of Interior and Labor, laid the foundations of an exhaustive inquiry into the facts precedent to a nation-wide white house conference on child health and protection. This cooperative movement among interested agencies will impose no expense upon the government. Similar nation-wide conferences will be called in connection with better housing and recreation at a later date.

In view of the considerable difference of opinion as to the policies which should be pursued by the federal government with respect to education, I have appointed a committee representative of the important educational associations and others to investigate and present recommendations. In cooperation with the Secretary of the Interior, I have also appointed a voluntary committee of distinguished membership to assist in a nation-wide movement for abolition of illiteracy.

I have recommended additional appropriations for the federal employment service in order that it may more fully cover its cooperative work with state and local services. I have also recommended additional appropriations for the women's and children's bureaus for much-needed research as to facts which I feel will prove most helpful.

PUBLIC HEALTH DEMANDS AID OF ALL AGENCIES

The advance in scientific discovery as to disease and health imposes new considerations upon us. The nation as a whole is vitally interested in the health of all the people; in protection from spread of contagious disease; in the relation of physical and mental disabilities to criminality, and in the economic and moral

advancement which is fundamentally associated with sound body and mind.

The organization of preventive measures and health education in its personal application is the province of public health service. Such organization should be as universal as public education. Its support is a proper burden upon the taxpayer. It cannot be organized with success, either in its sanitary or educational phases, except under public authority. It should be based upon local and state responsibility, but I consider that the federal government has an obligation of contribution to the establishment of such agencies.

In the practical working out of organization, exhaustive experiment and trial have demonstrated that the base should be competent organization of the municipality, county, or other local unit. Most of our municipalities and some 400 rural counties out of 3,000 now have some such unit organization. Where highly developed, a health unit comprises at least a physician, sanitary engineer and community nurse with the addition in some cases, of another nurse devoted to the problems of maternity and children. Such organization gives at once a fundamental control of preventive measures and assists in community instruction.

GOVERNMENT LENDS HELPING HAND

The federal government, through its interest in control of contagion, acting through the United States Public Health Service and the state agencies, has in the past and should in the future concern itself with this development, particularly in the many rural sections which are unfortunately far behind in progress. Some parts of the funds contributed under the Sheppard-Towner Act through the Children's Bureau of the Department of Labor have also found their way into these channels.

I recommend to the Congress that the purpose of the Sheppard-Towner Act should be continued through the Children's Bureau for a limited period of years, and that the Congress should consider the desirability of confining the use of federal funds by the states to the building up of such country or other local units, and that such outlay should be positively coordinated with the funds expended through the United States Public Health Service directed to other phases of the same county or other local unit organization. All funds appropriated should of course be applied through the states, so that the public health program of the county or local unit will be efficiently coordinated with that of the whole state.

SINGLE AGENCY IS URGED FOR CARE OF WAR VETERANS

It has been the policy of our government almost from its inception to make provision for the men who have been disabled in defense of our country. This policy should be maintained. Originally it took the form of land grants and pensions. This system continued until our entry in the World War. The Congress at that time inaugurated a new plan of compensation, rehabilitation, hospitalization, medical care and treatment, and insurance, whereby benefits were awarded to those

veterans and immediate dependents whose disabilities were attributable to their war service. The basic principle in this legislation is sound.

In a desire to eliminate all possibilities of injustice due to difficulties in establishing service connection of disabilities, these principles have been to some degree extended. Veterans whose diseases or injuries have become apparent within a brief period after the war are receiving compensation; insurance benefits have been liberalized. Emergency officers are receiving additional benefits.

HOSPITALS OPEN TO ALL VETERANS

The doors of the government's hospitals have been opened to all veterans, even though their diseases or injuries were not the result of their war service. In addition adjusted service certificates have been issued to 3,433,300 veterans. This in itself will mean an expenditure of nearly \$3,500,000,000 before 1945, in addition to the \$600,000,000 which we are now appropriating annually for our veterans' relief.

The administration of all laws concerning the veterans and their dependents has been on the basis of dealing generously, humanely and justly. While some inequalities have arisen, substantial and adequate care has been given and justice administered. Further improvement in administration may require some amendment from time to time to the law, but care should be taken to see that such changes conform to the basic principles of the legislation.

I am convinced that we will gain in efficiency, economy, and more uniform administration and better definition of national policies if the Pension Bureau, the National Home for Volunteer Soldiers and the Veterans' Bureau are brought together under a single agency. The total appropriations to these agencies now exceed \$800,000 per annum.

DEPARTMENTAL REORGANIZATION

This subject has been under consideration for more than twenty years. It was promised by both political parties in the recent campaign. It has been repeatedly examined by committees and commissions—congressional, executive and voluntary. The conclusions of these investigations have been unanimous that reorganization is a necessity of sound administration; of economy; of more effective governmental policies and of relief to the citizen from unnecessary harassment in his relations with a multitude of scattered governmental agencies. . . .

TWO PRINCIPLES ESSENTIAL

It seems to me that the essential principles of reorganization are two in number. First, all administrative activities of the same major purpose should be placed in groups under single-headed responsibility; second, all executive and administrative functions should be separated from boards and commissions and placed under individual responsibility, while quasi-legislative and quasi-judicial and broadly advisory functions should be removed from individual authority and as-

signed to boards and commissions. Indeed, these are the fundamental principles on which our government was founded, and they are the principles which have been adhered to in the whole development of our business structure, and they are the distillation of the common sense of generations.

For instance, the conservation of national resources is spread among eight agencies in five departments. They suffer from conflict and overlap. There is no proper development and adherence to broad national policies and no central point where the searchlight of public opinion may concentrate itself.

FUNCTIONS SHOULD BE GROUPED

These functions should be grouped under the direction of some such official as an assistant secretary of conservation. The particular department or cabinet officer under which such a group should be placed is of secondary importance to the need of concentration. The same may be said of educational services, of merchant marine aids, of public works, of public health, of veterans' services, and many others, the component parts of which are widely scattered in the various departments and independent agencies. It is desirable that we first have experience with these different groups in action before we create new departments. These may be necessary later on.

AS MATERNAL MORTALITY STATISTICS MEAN ONE THING IN ONE COUNTRY AND ONE THING IN ANOTHER, HOW CAN ACCURATE COMPARISON BE MADE?

IF UNIFORM UNIT OF THE MEASURE OF COMPARISON EXISTED UNITED STATES WOULD NOT FOR AN INSTANT BE CONSIDERED TO RANK IN THE FIFTEENTH OR SEVENTEENTH PLACE AS SHEPPARD-TOWNER PROPAGANDISTS CONTENTEND MOST EXHAUSTIVE AND WIDELY DIFFUSED RESEARCH MADE BY THE ILLINOIS MEDICAL JOURNAL FAILS TO DISCLOSE A SINGLE HONEST OR ACCURATE BASIS FOR INTERNATIONAL MATERNAL MORTALITY STATISTICAL COMPARISON

A prime absurdity in the propaganda being sent out by socialistic uplifters and proponents for the Sheppard-Towner-Newton et al maternity legislation is the statement that the United States' rank among the nations on low maternal mortality is fifteenth or seventeenth. This is not true. It has never been proven and it cannot ever be proven until there is found some greatest common denominator of census taking whereby statistics submitted for comparison have

all been secured, arranged and classified and computed by the same yardstick or rule of thumb.

At present there is a complete lack of uniformity in the method of gathering maternal mortality statistics or any other statistics. Naturally, then, death rates in different countries cannot be compared with the slightest degree of accuracy.

Now, since 1915, no trustworthy statistics have been available from Russia and the state sanctioned practice of abortion there is a factor that does not enter into the death rates of any nation. Italy offers no information as to how statistics are collected there. And between the United States and England the methods of census taking differ radically. The United States Census Bureau uses the blanket term of "puerperal state."

This means a death during pregnancy, confinement or period of nursing, or a death occurring within three months of the cessation of any of these three functions. In Great Britain, so keenly are the differential distinctions and classifications drawn, that there can be no possible comparison with statistics as set up by the United States. The A. M. A., recognizing this impossibility of scientific comparison of the death rates of nations, made a chart and posted it at the Atlantic City, N. J., convention of that body some years ago. The chart was captioned "International Incomparability of Mortality Statistics." The Massachusetts Medical Society in 1921 issued a statement deploring the receptiveness with which medical writers almost universally express and maintain an inferiority complex towards the obstetrical situation in the United States by a sheeplike acceptance of foreign statistics that have been culled under conditions far removed and actually incomparable with conditions for census taking in the United States.

If the truth were known probably there would be shown a more favorable mortality death rate in the United States than in any other country.

That this contention is recognized quite generally would appear from these excerpts from both scientific and governmental authorities.

From proceedings of the House of Delegates, American Medical Association, 1924:

Resolution on lack of uniformity in reporting deaths in the puerperal state.

Dr. Charles E. Mongan, Massachusetts, introduced the following resolution which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, There is a lack of uniformity among the several states of the United States in reporting deaths in the puerperal state; and,

WHEREAS, This lack of uniformity has placed the United States' death rates in the puerperal state in an unfavorable position; be it

Resolved, The House of Delegates of the American Medical Association in session June 9, 1924, memorialize the Director of the Census Bureau to the end that the Director of the Census Bureau request the several states of the United States to follow the method under the International Classification in Diseases adopted by the Registrar General of England and Wales in reporting mortality rates in the puerperal state.

Report of Reference Committee on Hygiene and Public Health:

(3) Your Committee has considered the resolution presented by Dr. Charles E. Mongan on behalf of the section on Obstetrics, Gynecology and Abdominal Surgery of the Massachusetts Medical Society, which has for its object the securing of greater uniformity and clarity in the recording and analyzing of statistics of death incidental to childbirth. Your Committee respectfully recommends that this resolution be referred to the Board of Trustees with the request that the Board inquire into the methods of recording and analyzing statistics of death incidental to childbirth and to take such action as may be necessary to make them represent the mortality for this cause.

Mortality Statistics, 1924, Department of Commerce, Bureau of Census:

"As already pointed out, the classification of deaths from puerperal causes differs greatly in different countries. Higher rates in one country than in another, therefore, do not necessarily mean higher mortality from these causes. However, as classification in a given country presumably differs but little from year to year, the rates do presumably serve as useful measures of mor-

tality from these causes within the country itself."

Page 62: "Are puerperal causes of death an increasing or a decreasing danger to the women of the United States?"

"If every State had had good birth and death registration since 1900 a satisfactory answer to this question would be possible, based on death rates from puerperal causes per 1,000 births, but as the birth registration area was not established until 1915, and then included but 10 states and the District of Columbia, it is possible to show only a few such rates for a few years, and it must be borne in mind that even then rates were too high whenever birth registration was incomplete.

"How do the death rates from puerperal causes per 1,000 live births in the birth registration area of the United States compare with the rates in foreign countries? Here again is a question of the greatest interest and importance which can not be answered satisfactorily both because of lack of data in this country and because there is no certainty that all deaths from these causes are classified in the same way in the various countries."

Not loose talk, but hard facts, are essential when compiling comparative statistics. And it is from too much loose talk and too lax a scrutiny of statistical methods that this maternal mortality slander has been attached to the United States—a nation noted for its sanitation and prophylactic progress.

FALSE PROPAGANDA STATING THE DEATH RATE AMONG BABIES AND MOTHERS IS MOUNTING AND THAT THEY ARE HIGHER IN THE UNITED STATES THAN IN FIFTEEN OTHER LEADING NATIONS

Truth distorted makes the worst sort of a lie. A glaring instance of such speciousness of statement lies in the fallacious propaganda sent out by friends of the nefarious and defunct Sheppard-Towner Act, and of other forms of maternity legislation. Through these sources of misinformation are circulated numerous definite and deliberate falsehoods.

The gist of the current variety of this inac-

curate propaganda is the insidious untruth that the United States has a higher death rate than any other of the world's fifteen leading nations, and that this high mortality is being increased daily because the Sheppard-Towner Act is not spending more and more of the taxpayer's money in jobs for lay people dealing with medical service to the poor or unfortunate.

In the first place the United States hasn't the highest death rate among the world's fifteen leading nations or any other group of the world's population.

In the second place the mortality rate is not increasing because of any lack of appreciation of the Sheppard-Towner Act. It was shown recently by statistics that Illinois (*Editorial, ILLINOIS MEDICAL JOURNAL*, November, 1929) a state that repudiated the Sheppard-Towner Act, had a far lower maternity mortality than any of the states that had it. California was the only sizable state having the Sheppard-Towner millstone that did not have an increased or at any rate an unlowered death rate. California climate under any circumstances keeps this section of the United States out of the red where death rates are concerned.

Anybody who knows anything at all about the assembling and compiling of statistics knows that it is practically impossible to obtain an accurate census. Maternity census is probably one of the most elusive to obtain. There has been no census of weight taken on maternity mortality that would justify the statements sent out by the protagonists of this "lay medical service," that it is attempted to force upon the American people. The appended letter is an illustration of the untruthful propaganda that is being sent out.

DEATH RATE AMONG BABIES AND MOTHERS IS MOUNTING

"Higher in the United States than in Fifteen Other
Leading Nations of the World

"New York—The death rate among mothers in childbirth and among babies is constantly growing and is higher in the United States than in fifteen other leading nations, according to *Woman's Home Companion*.

"The number of mothers and babies that die every year exceeds the whole number of American soldiers killed in the World War. In the past year the number reached 200,000.

"Relief from the situation is not in sight, according to the magazine. The federal appropriation for the

children's bureau expired last June and congress failed to renew it. The Jones-Cooper bill, which would serve the same purpose, has long been held in abeyance and unless action is taken soon, the work that had been started in nearly every state may become completely disorganized.

"The federal plan was to apportion a part of \$1,000,000 among states that desired to establish children's bureaus. Each state receiving a grant was expected to match the sum with a local appropriation. The plan went into operation eight years ago and effective machinery was built up throughout the country. Now, with the federal aid withdrawn, many states are unable to keep up the organizations and the death rate has been mounting steadily.

"Fatalities have been unusually heavy in the mountains and other remote regions where proper medical and nursing care at the period of maternity are unavailable. Under the children's bureau organization, it was possible for visiting nurses and doctors to extend aid in isolated communities."

The periodical mentioned, *The Woman's Home Companion*, has long been interested in a "Better Babies Movement," sending out pamphlets and the like to prospective mothers. The idea has been a fine promotion stunt for the circulation of the magazine, and the simpler instructions of bathing children and keeping the home and food supplies sanitary has probably done more good than harm. Of late, however, the periodical mentioned has shown rabid signs of being another lay institution practicing medicine, and as such certainly should be set right by medical men versed in the practice of scientific medicine. The *Woman's Home Companion* is an excellent monthly magazine of high moral intent, and acceptable to clean and cultured homes, but it certainly is not a licensed medical practitioner and should not lay itself liable to the charge of malpractice on paper by usurping a skill of which it knoweth naught. "Federal aid" is no fairy godmother. "Federal aid" is hard earned dollars out of a workingman's pocket. Why take any more of these to pay taxes to help any magazine, no matter how meritorious, to build up its circulation, increase its advertising rates and likewise its profits? Both sides of a question should be freely examined and exploited by any fair, just group of individuals. Unfortunately when it comes to maternity and other welfare legislation the major portion of welfare sponsors seem disinclined to present all the facts to the public.

GET RID OF THE DOCTOR AS A PROFESSIONAL UNIT BUT USE HIM AS A COG IN THE MACHINE

THE DOCTOR AS AN INDIVIDUAL BEARS THE SAME RELATION IN CURRENT ECONOMICS AS THE MIDDLEMAN TO THE BIG MERCHANT AND SO MUST BE STAMPED OUT

The individual practitioner in medicine stands economically in the same position as does "the middleman" in business.

Now mass treatment of disease begins to be the order of the day. In Russia this mass treatment idea is classified under the blanket term of "Collectivism."

The creed of collectivism as well as its tendencies is to blot out mercilessly all individualism whether of commerce, art or science. The communistic, sovietistic, socialistic trend of much medical legislation, of the rampant craze for community medical practice and for state medicine applies this creed of collectivism to the individual practitioner in America.

It is well known that all vestiges of private enterprise are being exterminated with rapidity through the whole area of the "Soviet Union," and that poor Russia has really exchanged one despotism for another. It seems a shame that a democracy built upon the freedom of the individual, the immunity of private rights, should welcome with open arms the same creeds that are the very lifeblood of the tyrannous soviet. Law, religion, medicine, art, education, business and even the private lives of the citizens are under the drastic rule of the soviet, a rule that in spite of its uncouthness is even more despotic than the despotism of the czars. Not only are all private traders being blotted out with the same zeal as the kulaks were destroyed but even small craft workers such as cobblers, dress-makers and toymakers are denied economic survival except when working as members of co-operative and collective groups of their craft. Lawyers, too, can practice only as collectives. Their fees are limited. The proceeds are divided. The commissariat of health has proposed such regulations as makes survival of private medical practitioners a matter of the greatest doubt. Within a month all private hospitals will be liquidated. Private patients will henceforth not be allowed physicians connected with state hospitals and institutions. Under the soviet's elab-

orate social insurance system this means an overwhelming majority of the medical profession.

This gist of despatches received recently from Russia corroborates the statements made by Dr. Glenn Frank in an article published in this issue. As he points out the rough machinery for establishing a soviet in this country, with medical practice the object of its initiative is all around and ready for the assembling.

Protective measures against such an irremediable outrage lie within the hands of the physicians of the country and it rests upon them to take immediate steps under the slogan, "An ounce of prevention is worth a pound of cure."

A BILL IN CONGRESS TO PROHIBIT EXPERIMENTS ON DOGS IN THE DISTRICT OF COLUMBIA

There has been introduced in the House of Representatives a Bill known as H. R. 7884, the title of which is "TO PROHIBIT EXPERIMENTS ON LIVING DOGS IN THE DISTRICT OF COLUMBIA AND PROVIDING A PENALTY FOR VIOLATION THEREOF."

The bill was referred to the committee on "District of Columbia." A member of this committee from Illinois is Honorable Frank R. Reid, of Aurora (eleventh congressional district, comprising Kane, Will, Du Page and McHenry Counties).

Members of the medical, dental, pharmaceutical and nursing professions, the faculties of universities, colleges and educational institutions generally having research departments as well as hospital managements should write Congressman Reid, protesting against the enactment of such a bill as harmful to medical research and the advancement of public health.

In the March, 1929, issue of the ILLINOIS MEDICAL JOURNAL can be found most of the arguments needed, showing why such legislation should not be enacted. The data are quite exhaustive; for this reason we are not reproducing the article at this time. We will, however, to any one making request, furnish much information showing what vivisection has done for humanity.

In the January, 1930, issue of the JOURNAL we published an editorial showing the activities of the Illinois Antivivisection Society during the last six months of the year 1929. During the

time mentioned they sent out letters stating that a "dog bill" will be introduced at the next session of the Illinois Legislature.

The next session of the legislature in this State convenes in ten months, or January, 1931. In this short interval much educational propaganda is required to get the real facts to the public. It therefore behooves the faculties of the universities, colleges, teaching institutions, research investigators, members of the medical, dental, pharmaceutical and allied professions, hospital managements; those interested in scientific progress and conservation of human life and the relief of human suffering, to get busy in a campaign of education showing that the passage of antivivisection legislation in Illinois or elsewhere will at least retard if not stop scientific medical progress and menace the health welfare of the public.

The educational vivisection campaign should stress the great advance that medicine has made through animal experimentation; that because of these marvelous discoveries made through vivisection hundreds of thousands of people are now living who would have perished if it were not for information obtained through experimentation on rats, mice, guinea pigs, rabbits, monkeys and dogs.

THE ILLINOIS ANTIVIVISECTION SOCIETY HELD A MEETING IN CHICAGO IN JANUARY, 1930

A JOINT MEETING TO PROTEST AGAINST THE APPOINTMENT OF DR. HAMILL AS CHAIRMAN OF THE WHITE HOUSE CONFERENCE ON CHILD WELFARE

The Illinois Antivivisection Society on Friday evening, January 24, at Hotel Sherman held a public meeting in Chicago which received some newspaper publicity.

Our representative attended the meeting. Excerpts from his report are as follows:

Joint meeting of the nine societies called by National Antivivisection Society to protest to President Hoover against his appointment of Dr. Samuel McC. Hamill of Philadelphia as chairman of the medical section of the White House Conference on Child Welfare. About 250 persons in attendance. C. E. Richard, of the National Antivivisection Society presiding. J. S. Codman of Boston, vice-president of New England Antivivisection Society was principal speaker.

Groups represented:

National Antivivisection Society.

Illinois Antivivisection Society.
 Anti-Cruelty Society.
 Chicago Humane Education Society.
 Evanston Humane Society.
 American Medical Liberty League.
 U. S. Health League.
 Taxpayers' and Voters' League of Illinois.
 One other, name of which could not learn.

Mr. Codman's address consisted of an attack on Dr. Hamill mainly read or quoted from the speaker's pamphlet "Human Vivisection and the American Medical Association," copies of which may be obtained from the New England Antivivisection Society, 605 Tremont Temple, Boston, Massachusetts. The attack was based on Dr. Hamill's use of tuberculin on 160 children in St. Vincent's Home, Philadelphia, as reported in Arch. Int. Med., Dec. 15, 1908. The argument was that these experiments were of no benefit to the patients, their consent could not have been obtained, therefore the procedure was unethical. Mr. Codman presented a dignified judicial argument, which to a LAYMAN must have been quite effective. For the purpose of the meeting, the case was very adroitly presented. The speaker stated he would have no criticism to offer if the experiments in question were for the benefit of the patients or even if Dr. Hamill *thought* they would be benefited. But he justified his criticism by quoting the author to the effect that the latter *admitted* that was not the purpose.

The speaker then quoted from "Defense of Research" Pamphlet No. 26 of the A. M. A. pointing out that there is an inconsistency in the attitude of the Association in defending human experiments such as Dr. Hamill's by silent acquiescence and, on the other hand, condemning as unethical such procedures, as set forth in an editorial, J. A. M. A., Dec. 20, 1913. He also read a letter from Dr. Richard Cabot condemning such experiments and stating that "it is high time to repudiate defense of human experiments as without ethical justification, a practice that is common and is condoned." (Quoted from hasty notes.)

Mr. Codman also read a letter which he had addressed to *Mister Morris Fishbein* (emphasizing title) asking for a statement of the view and attitude of the A. M. A.

Dr. Fishbein's reply was read, as follows (approximate quotation): "It is impossible for us to answer your questions. Our views are fully expressed in our pamphlet on animal experimentation."

The speaker then called attention to the fact that Pamphlet No. 26 is no longer included in the printed price list of publications by the A. M. A. and raised the question as to whether this was a tacit admission that it represented an unethical attitude or merely a matter of being out of print. If the former (he said) then some statement of policy should be made to the public.

A resolution was presented, addressed to President Hoover, asking for the immediate recall of Dr. Hamill's appointment. Individuals were urged to write personal letters of protest. Resolution adopted.

Dr. Held was then called on and spoke much as he

has on previous occasions, a highly emotional and fanatical phillippic. However, he quoted an anonymous letter alleged to have been received by Mr. Richards: "If you damned fools haven't enough sense to keep that New Englander out of Chicago, we will take care of him. We don't want him here shooting off his mouth about doctors. It will take a dozen doctors to dress his wounds if he appears. We mean business." In the report of the meeting which appeared in the *Tribune* the follow morning it was stated that two policemen sat on the platform to protect the speaker. I saw no policemen in the room. If present they were not in uniform and did not sit on the platform. Incidentally many of those in the audience apparently knew of this letter as there was much evident apprehension over the presence, in a body, of about a dozen medical students, from Northwestern, probably attracted by the publicity notice in the papers. They were watched quite closely for any hostile move.

Another resolution was introduced by a man unknown to me, condemning vaccine and serum therapy and inviting the A. M. A. to participate in a symposium on the subject. This was promptly squelched by both Mr. Richard and Mr. Codman as having no bearing on the main purpose of the meeting. A very effective move. The same man stated that from a friend of his who graduated from a local medical school four years ago he had learned that sulfuric acid had been poured down the throat of a live, unanesthetized dog and that his informer had, out of pity, killed the dog, as a result only narrowly escaping expulsion.

Next, W. A. Gross, 538 Rich Avenue, Evanston, states that his boy died about a year ago as a result of treatment, during an attack of scarlet fever, administered by Dr. ————. He alleged that serum treatment was the cause of the boy's death.

Personal impressions. Aside from these latter incidents, I should say that, from the viewpoint of the antivivisectionists, and in consideration of the purpose of the meeting, it was a highly effective and successful meeting. As stated above, there were many weak points in the whole affair apparent to me, but from the viewpoint of the laity I believe this impression is correct. Also, no one should underestimate Mr. Richard's ability to succeed in the task he has set himself, of making the National Antivivisection Society a potent influence. From this meeting I gained considerable respect for his ability as an opponent.

ILLINOIS WOMAN'S AUXILIARY UNITS SEEK INFORMATION

The following units of the Woman's Auxiliary, Illinois State Medical Society, gives the following information and would like data bearing on the activities of other County auxiliaries:

The Auxiliary to the Cook County Medical Society entertained the National President, Mrs. Hoxie, and her board at tea in November. At

the December meeting the State President, Mrs. John R. Neal, gave a splendid paper. The Chicago Auxiliary is glad to have members of the County Auxiliaries attend their meetings in the Medical and Dental Arts Building whenever they are in Chicago on Wednesdays.

Other county Auxiliaries which are doing interesting things will please send news notes to Mrs. T. O. Freeman, Mattoon, Illinois, Publicity Chairman.

McDonough County Auxiliary meets for dinner with the doctors and enjoys their program when interested. Otherwise, they play bridge. They wish to know more about the State Auxiliary.

Randolph County Auxiliary seems to have a very much alive president, but since they are still "in the mud," as she expresses the condition, their attendance is limited. They recently had a very delightful social meeting at the home of the president.

Vermilion County Auxiliary meets once a month and carries on many interesting activities. At the January meeting they reviewed Dr. Whalen's article on "What Can the Woman's Auxiliary Do?"

McLean County Auxiliary has been writing to senators and representatives voicing their protests against the Sheppard-Towner Extension Bill and the Anti-vivisection Bill. Their January meeting was featured by a lecture on "The Problem of the Cripple" given by a local surgeon.

Coles-Cumberland Auxiliary meets every two months, has dinner with the physicians, then adjourns to a private room for study and discussion of problems affecting the practice of medicine. For January the subject was State-controlled Medicine in Russia.

The president of Douglas County is planning to entertain the members of the Auxiliary at a tea in February. This Auxiliary finds difficulty in having meetings during the winter months.

The president of Fulton County Auxiliary says they need more information about the purpose of the Auxiliary.

De Kalb County Auxiliary is in need of more information to keep the interest alive.

THE EDUCATIONAL COMMITTEE REPORTS PROGRESS

The Educational Committee will schedule a speaker to address the teachers of Carroll County on Monday afternoon, March 17. The County Superintendent of Schools, who has speakers from the Committee for the past three annual teachers' institutes, writes: "Our teachers have always enjoyed these talks, and would like another speaker this year."

The Superintendent of the Macoupin County Public Schools has asked the Educational Committee to schedule a physician to take part in the program of his annual teachers' institute to be held next October.

J. Howard Beard, Health Officer at the University of Illinois, is cooperating with the Educational Committee by giving a health talk to the students of the Paxton Community High School on February 13. Cleaves Bennett, Councilor for the 8th District, will address the students of the Charleston High School on Tuesday afternoon, March 18th. In the evening he will speak at the open meeting which is being sponsored by the Charleston Parent Teacher Associations. The Educational Committee is furnishing an exhibit of health posters to be used in connection with these two appointments.

THE UNITED STATES PHARMACO- POEIAL CONVENTION

ELEVENTH DECENNIAL CONVENTION FOR THE
REVISION OF THE PHARMACOPOEIA OF THE
UNITED STATES OF AMERICA,
1920-1930

In compliance with the provisions of the Constitution and By-Laws of the United States Pharmacopoeial Convention, the President of the Convention hereby invites the several bodies, entitled under the Constitution to representation therein, to appoint delegates to the Eleventh Decennial Convention to meet in Washington, D. C., on May 13, 1930. Eligible organizations and colleges which have not yet done so, should send for credential blanks to the Secretary of the Convention, Lyman F. Kebler, M. D., 1322 Park Road, N. W., Washington, D. C.

The Board of Trustees have asked that cre-

dentials be filed with the Secretary of the Convention by March 14, 1930.

Respectfully,

REID HUNT, M. D.,

President of the United States Pharmacopoeial Convention of 1930.

POST-GRADUATE COURSE

Professor Georges Portmann will hold a post-graduate five-week intensive course of ear, nose and throat surgery at the University of Bordeaux, France, which commences July 21, 1930. This course is open to American physicians. For information apply to Dr. L. Felderman, Mitten Building, N. W. cor. Broad and Locust Sts., Philadelphia, Pa.

PUBLIC MEDICINE BUREAU PROPOSED —WILL ABOLISH DEPARTMENT OF PUBLIC HEALTH—WOULD FURNISH FREE AND COMPLETE MEDICAL SERVICE TO RESIDENTS OF MASSACHUSETTS

According to the *North Adams Evening Transcript* under date of December 23, 1929, a bill was introduced in the Massachusetts legislature December 20 that is of considerable interest, not only to physicians of Massachusetts but of other states. It calls for creation of a new department of public medicine, abolishing the department of public health, the department of mental diseases and assuming other activities in the medical line of the departments of public welfare and industrial accidents. It must bear the signature of a legislator before it can be considered officially presented. It is signed by Armand C. Bang of Newton and Dr. Gilbert W. Haigh of Worcester.

The new department would be created to furnish a free and complete medical service to the people of the commonwealth, patterned upon the bureau of medicine, and surgery of the United States navy. It would be in charge of a commissioner to be known as the medical administrator of Massachusetts, who would receive a salary of \$10,000 with allowances. Five assistant medical administrators would be created, each receiving \$8,000 and allowances.

MEDICAL ADVERTISING SOLICITOR WANTED

The Illinois Medical Journal desires one or more advertising solicitors. Persons with advertising experience preferred. No guaranteed salary. Compensation on commission basis only.

Illinois Medical Journal,
6221 Kenmore Ave., Chicago.

WANTED: BACK NUMBERS OF THE ILLINOIS MEDICAL JOURNAL

The Bureau of Science Library, Department of Agriculture and Natural Resources, Manila, Philippine Islands, desire back numbers of the JOURNAL as follows:

Vol. 29.—February and March issues, 1916.

Vol. 30—August and December issues, 1916.

Kindly send numbers asked for to the ILLINOIS MEDICAL JOURNAL, 6221 Kenmore Ave., Chicago.

The managing editor would like a copy of Vol. 26, July, 1914. Please state price.

THE SHIFTING OF DISEASES DURING THE PAST THIRTY YEARS—SOME DISEASES HAVE SHOWN MARKED DECLINE OTHERS HAVE SHOWN CORRESPONDING INCREASE

According to a recent bulletin compiled by Dr. Andy Hall, State Health Director, thirty years of attack have put to flight a dozen diseases so that the mortality rate now attributed to them stands nearly 70 per cent. below the figure prevailing at the turn of the century. A half dozen other diseases have increased so in malignancy that the death rate from them is now 150 per cent. above what it was in 1900. Little or no change has marked the course of the 120 odd other diseases common to humanity in this latitude.

This is the gist of a review of the health situation in Illinois, compiled by Dr. Andy Hall, state health director, in mapping out the future program of his department with results thirty years hence in view. The shifts in the battle front of diseases have netted a 10 year increase to the average span of life since 1900, the director pointed out, and possible shifts during the next

thirty years should net another decade of average life extension.

"In 1900," Dr. Hall said, "the combined death rate from tuberculosis, diarrhea, typhoid fever, scarlet fever, diphtheria, smallpox, malaria, puerperal septicemia, bronchitis, whooping cough and congenital debility was nearly 500 per 100,000 population. In 1928 it was less than 150. Very marked declines have been observed in the death rates from each of these causes, ranging from a decrease of 94 per cent. for typhoid fever to 47 per cent. for tuberculosis. These facts denote the triumphs of the practice of modern medicine, sanitation and hygiene.

"On the other hand, the death rate from appendicitis, diabetes, cancer, nephritis, cerebral hemorrhage and heart disease, considered in aggregate, has gone up from 250 to 625 per 100,000 population. For each of these ailments the death rate has more than doubled since 1900 and for diabetes it has more than tripled. Some of the increase is due to the prevention of childhood infections, which causes a larger percentage of people to reach the age when these diseases are most common. This does not explain the increase in appendicitis, a disease primarily of young people, nor does it explain a significant proportion of the increase in general.

"Pneumonia heads the list of diseases which have manifested no significant change in malignancy or frequency. In this group also is found measles, rheumatism, cirrhosis of the liver, hernia, syphilis, diseases of the stomach and tetanus.

"Fatal accidents, except for those due to automobiles, have declined. The phenomenal increase in deaths from automobile accidents is an outstanding black spot on the history. In 1913 there were only 2,488 deaths from automobile accidents in the United States. Last year there were nearly that many in Illinois and over ten times that many in the United States.

"The end of the next 30 years ought to find many of the declining group almost completely stricken from the disease calendar. Pneumonia and measles should be subject to significant control. The age at which heart disease and cancer becomes significant should be shoved upward noticeably and diabetes and appendicitis ought to become rare causes of death."

Correspondence

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

Alexander McKinlock Memorial Campus
303 East Chicago Avenue
Chicago, Illinois
Office of the Dean
Ward Memorial Building

MEDICAL HISTORY OF ILLINOIS

February 3, 1930

To the Editor:

May I express the hope that the Illinois Medical Society will not lose the unusual opportunity which lies in completing the medical history of the State of Illinois. Regardless of the cost, the accomplishment of this task must be assured for it means the preservation for all time of the names and careers of those splendid men who have created Illinois medicine.

There are many reasons why the recorded history of medicine is of paramount importance.

First, few physicians leave monuments to themselves or to their work in the form of large public endowments that either preserve their names or the traditions of the period in which they lived.

Second, the public frequently exhibits deep gratitude to the physician in the period of illness, but rarely do patients of wealth dedicate memorials to physicians who have aided in preserving the health of the community.

Some few physicians will be remembered by their outstanding work; for example, the name of Frank Billings has been so indelibly written into the life of Chicago and into world medicine that regardless of monuments his name will endure forever. Chicago and Illinois may well be proud of this outstanding figure. But those who have accomplished their tasks by the wayside, who have meant much to the towns and villages, to the development of the right type of medical practice, to the progress of the science of medicine, to the evolution of medical education, to these all that the present generation can do is to see that, in part at least, their names are not forgotten and their good deeds are recorded.

The Illinois Medical Society owes much particularly to Dr. Lucius Zeuch and Dr. Charles

Whalen who have worked unceasingly and without the slightest compensation in the gathering of material for the second volume of the medical history of Illinois. The work covers every county in the state and will preserve a record of the utmost value to posterity. History as such cannot be written too close to its making. On the other hand every month of delay means loss of valuable material: record books are disappearing as are photographs of localities and individuals. The work of the committee has been most timely and it is now of the utmost importance that the profession of Illinois shall see clearly the debt of remembrance owed to the makers of Illinois medicine.

Sincerely yours,

Irving S. Cutter, M.D., Dean.

REFUTE STATEMENT THAT THE
DEATH RATE AMONG BABIES AND
MOTHERS IS MOUNTING
CIVIC FEDERATION OF CHICAGO

Chicago, Ill., Nov. 29, 1929.

To the Editor: Here is some propaganda from the *Chicago Eagle* entitled "Death Rate Among Babies and Mothers Is Mounting." I suspect you have the data with which to answer it. May I suggest if you do have it or can get it that you publish one of your pithy editorials setting up this claim and the actual facts and send copies of the ILLINOIS MEDICAL JOURNAL in which it appears to the press of the city and state.

DOUGLAS SUTHERLAND, Secretary,
Civic Federation of Chicago.

NOTE AND COMMENT

Elsewhere in this issue appear two editorials in which we attempt to show that there are no legitimate statistics in existence justifying the statement that death rate among babies and mothers is mounting, neither are there authentic statistics available on which to base the statement (as per *Woman's Home Companion*) that the maternal death rate is higher in the United States than in fifteen other leading Nations. In the interval between the receipt of the above letter and the time of going to press with this issue, we have conducted an exhaustive research

on maternal vital statistics, hoping to be able to refute by authentic data (statistics measured by the same yardstick) showing the actual status of maternal mortality in the various countries. Scientific trustworthy statistics along this line are not in existence.

We refer the reader to the editorials mentioned.

HERE IS SOMETHING OVER WHICH THE
COMMITTEE ON MEDICAL CARE
MAY DELIBERATE

January 9, 1930.

To The Editor: Your plea for additional "Correspondence" is about to be rewarded with a story of the *Worm that Wriggled but Could Not Turn*.

The story includes copies of a letter received by a doctor, from a railroad engineer, and the reply, typed across the bottom of the letter. It goes:

Once upon a time, between the months of June and December of 1922, to be exact, a railroad engineer incurred a financial obligation in the amount of twenty-one dollars due for medical services rendered a member of his family in his home. Railroad engineers are said by conductors to class among the best overpaid of workmen.

Envision a lapse of time during which payments have been made upon the bill, mostly in two dollar amounts. You are invited to weep over copies of subsequent correspondence.

Copy of a letter and reply:

December 31, 1929 (but received on first delivery of January 8, 1930). "Doctor—Dear Sir: Will you please send the balance of my bill with you. We certainly appreciate you being so patient with us and we are hoping you or wishing you and yours a happy and prosperous new year. CJH., blank, blank street, blank, Illinois." And the reply, without superscription: "BALANCE DUE \$6.00. You got me wrong. It is not patience at all in your case: I have just plain neglected to step on you because I was busy doing better things—laziness, I guess. I'm sorry. My New Year hasn't a chance in the world to be even bearably prosperous unless other people show behavior far different from yours. Sin-

cerely, blank: January 8, 1930. (One inclosure: receipt for the proffered two dollar POMO)."

Now, I ask you: Does the Tuberculosis "Prevention and Treatment" Society care for the doctor's share of the remaining SIX? Does the Committee on the Cost of Medical Care wish to include the burlesque fifteen (six twos and a three within the same eight years) in its record of deliberations? Both are welcome.

Sincerely,

SUBSCRIBER.

IF STATISTICS WERE FACTS THE SHEPPARD-TOWNER MATERNITY BILL
SHOULD NEVER HAVE BEEN
ENACTED

MONTANA WORKING UNDER THE SHEPPARD-TOWNER ACT IN 1927 HAD THE LOWEST
BIRTH RATE IN THE NATION AND THE
HIGHEST SEPTICEMIC RATE

Brooklyn, N. Y., Jan. 2, 1930.

To the Editor:

Lay and even medical papers, interested in perpetuating the Sheppard-Towner Maternity Bill, which a Congress wisely decided to terminate before it wrecked the nation, have been feeding us statistics for some time which tend to confuse the reader and cloud the real issue of Sheppard-Towner Maternitism. An over-worked one is that "maternal deaths amount to 200,000 a year, more than were killed in the World War! !" Let us see if we can not clarify the atmosphere a little with some of those statistics which the Uplifter loves so much and I hate. For statistics lie so easily and conveniently.

Census reports showed, in 1920, 43,168,199 married people (exclusive of the widowed). That means 21,584,099 couples and the total baby production was 1,856,068, or one baby to every 11.6 couples! Some showing of virility and fecundity for our glorious republic. We who do have children may be pardoned a little superiority complex.

Now, let's see about that little "200,000 maternal deaths per year" in the light of those 1,856,068 live births, and which make 10.7 deaths per thousand. Now, turn to what the Adjutant General's office says: 4,727,988 U. S. troops in the World War (some here, some over

there). There were 50,510 deaths (inclusive of immediate and consequent upon wounds) which, also, makes 10.7 deaths per thousand involved in the struggle. Still another statistician says the general death rate of mothers was 6.5, with the rural 5.7 and the urban 7.4.

Remember, please, that we who see the patients die and know the proportionate value of causes which contribute to the fatal termination of a pregnancy can not pass the whole picture over to the Registrar of Records and beyond him into the mind of the partisan statistician who is searching for "facts" (God save the mark!) so that deaths from causes complicating pregnancy, being tied in with the pregnancy itself, are often interpreted, by the Uplifter's statistician, as an argument for the perpetuation of the Sheppard-Towner Maternity Bill with its expenditure of \$2,000,000 each year by the Children's Bureau of the Federal Department of *Labor!* (sic).

If statistics were facts the Sheppard-Towner Maternity Bill should never have been enacted. Witness: In the text-book of the Uplifter, used as a book of reference when propagandizing that Bill, in addition to the writings and teachings of Mme. Alexandra Kollontay, Soviet Russia's first Commisar of the Department of Welfare, which are quoted generously and approvingly by the author, who is an employee of the American Association for Labor Legislation, which text-book is "Maternity Systems in Other Countries," alias "Children's Bureau Publication No. 60," printed and distributed with our tax money—there will be found at page 75 the fact that 250,000 compulsorily insured women in Germany, under just such "maternity aid" as is vouchsafed us under the Sheppard-Towner Bill, where the Bothersome Berties and Meddlesome Matties dispense the whispered word of how to be childless, though married, yielded only 4.28% of births, while 25,000 voluntarily insured women NOT subject to such visitations yield 42.8% births; ten times the percentage from one-tenth the number of women. Then the 250 000 yielded 17.2% abortions, while the 25,000 yielded but 2.6% abortions—one-seventh the percentage. . . . AND . . . the deaths of women from disease causes complicating pregnancy was 11% among the 250,000 and 10.2% among the 25,000—almost identical. Rather

good "statistical" evidence that birth control and abortion, NOT death prevention, follows the flag of the Brotherhood of Man held in the hand of the Uplifter.

Well, that is what I think may properly be deduced from the Uplifters' own statistics. See if you can see what I see in the following facts:

From 1921 to 1926 the Bothersome Berties and Meddlesome Matties of the Children's Bureau of the Federal Department of Labor carried on an intensive campaign among the virile men and fruitful women of the State of Montana and when they got through it was shown by the U. S. Public Health Reports of early 1927 that Montana came through with the lowest birth-rate in the Nation, 14.2 (13.6 in 1927), and the highest septicemic rate. If septicemia in that connection does not mean blood poisoning following abortion, what can it mean?

Your Journal has carried some comparative figures of the States which have and which have not adopted the Sheppard-Towner Maternitism with credit to the latter which, after all, is relative because a plague such as that has no respect for State boundaries and is bound to filter in. The really important thing for this nation to consider is the fact that the socially superior, the highbrows, the intelligentsia, are running to Pekingese pups and Chow dogs, instead of staying parental, while the so-called lower order of Society, the "inferior"—the proletariat—goes right on using his women and the women go right on glorying in large families and feeling ashamed if they are childless—but the top layer of their children, under our generous system of education, graduate into the middle range of Society, and, like the middle-range, aping the intelligentsia, lap up this birth-control stuff and drop the birth-rate IN THAT MIDDLE-RANGE which is the natural buffer (strong or weak) against the oppression of aristocracy and the horrors of mobocracy.

Louis I. Dublin, Ph. D., statistician for the Metropolitan Life Insurance Company, a worthy investigator, tells us that for progress a marriage should produce four children—two to take the place of the producers when they shall have gone West, and two to take care of death among the progeny—and, perhaps, those 10.6 barren ones referred to in the beginning of this article. That three children are too few and five are

more than enough and that the United States is showing two and one-half; at that, only one couple in 28 are producers (statistically).

That same investigator also points out the fact that in 1916 Dr. Doyen of the French Academy of Medicine warned the French people that the principal cause of death in France was venereal disease. Rather tough on the Uplifter who is going to save us from being a race of morons by limitation of population and save those 200,000 mothers at the cost of quite a bit more pollution of the rest of us. Today, by the by, the death rate in France is greater than the birth rate. In 1811 it led Germany and England in population. In 1911 it had fallen to third place. Do you see what I see?

Where is our adult population coming from twenty years hence to take care of the increased mass production of "big business," particularly since we have put the bars up to immigration?

How about the morale of the country if the morality of the people is to be measured by a falling birth rate, an average of 2.65 per 1000 of population from 1921 to 1926 after five years of Sheppard-Towner Maternitism? We surely can not measure it by reduced virility—and we can not blame it on the war, which was over in 1918.

Why can we not be sane about this statistical stuff? On the basis of that 2.65 per 1,000 of population we lost 314,364 babies per annum (1921 to 1926)—babies who will never be American citizens. Yet the Sheppard-Towner Maternityites tell us that the baby death rate per 1,000 live births dropped from 76 in 1921 to 65 in 1926 through the beneficent influence of that Maternitism. Well, the breakfasts you lost because they would not stay down are just as much of a loss as those that you did not get. so if we add those 314,364 "stopped babies" we will find the baby death rate or baby loss rate in 1926 was really 243.31 per 1,000 live births! Let them laugh that off—if they can.

Our density of population in 1930 will be 40 persons per square mile of land area. Our density increase for the past sixty years has been 4.5 persons per square mile per ten-year census period or 0.45 persons per year. At the same rate of increase it will be 1,159 years before we reach Holland's 561.6. Barring war, pestilence, famine, birth-control and steriliza-

tion, or other national calamity, it will be A. D. 3.089 before we may begin to think of this limitation of population stuff, which Holland is now regretting and France has long since been regretting.

Good night. statistics. Good morning, common sense.

JOHN J. A. O'REILLY (M. D.)

642 Second St.

OFFICIAL HEALTH PROGRAM OF THE WOMAN'S AUXILIARY OF THE AMERICAN MEDICAL ASSOCIATION

1. PUBLIC HYGIENE.

Fundamentals upon which Auxiliary work for the improvement of public hygiene should be based:

(1) *Recognition of the fact that public health work is a highly technical job, requiring scientific, technically trained workers. That health work undertaken by lay women with no knowledge of the public health problem as a whole is necessarily fragmentary and ineffective.*

(2) *Recognition of the fact that every state, county and city is entitled to a scientific, full-time health department (organized not to treat the sick, but to prevent disease and promote health), adequately financed, free from political domination, and providing continuity of service to a trained personnel so long as work is efficient.*

(3) *Recognition of the fact that the first and most fundamental job for lay organizations like the Auxiliary is to secure such scientific full-time health departments and adequate health protection, in their state, their county, their city or town.*

(4) *Recognition of the fact that where efficient, full-time, scientific health departments do not exist health activities must be initiated and carried on by volunteer unofficial agencies; lay organizations should support and cooperate with the constituted health officials and should be willing to take orders from them.*

(5) *Recognition of the fact that no health department, state, county or city, can do effective work without intelligent cooperation of the public; that such public cooperation depends upon widespread health education; that lay organizations can do this educational work, and are needed for it, and that the Auxiliary can be one of the most valuable tools for an official health department to use in this work.*

Most volunteer agencies do not yet realize the wastefulness of their individualistic efforts. One of the first things the Auxiliary should do is to work for a change of attitude in other volunteer women's organizations.

The National Auxiliary recommends that each State Auxiliary undertake, under the direction and with the help of the Public Health Committee of the State Medical Association and of its Advisory Council a

study *first of all* of the fundamental principles of health promotion and disease prevention; second, of the set-up considered essential by public health experts for an effective state health department, of qualifications of personnel, adequate budget, and the like; and third, of the state health conditions; that of acquainting the state board members with the result, and that recommendations for educational work by the county Auxiliaries be based upon the conditions found.

In states where all is well and where time has developed good official health machinery and good health conditions, general knowledge of the fact will tend to prevent interruption of the excellent work and will be a source of satisfaction to the women of the state.

In those states where there is much yet to be done, this investigation will indicate what sort of work needs doing first. For example:

(a) In those states which are not in the birth registration area the Auxiliaries would, without doubt, wish to tackle, as their first job, the ninety per cent birth registration problem.

(b) In those states in which the state health department believes the "County Health Unit" to be the solution of the rural health problem, the county auxiliaries should be encouraged to take as their chief work such persistent and widespread education of the public as will gradually create a general demand for the full-time county health department.

(c) In those states where the rural health work is directly done "long distance" by the state health department, the county auxiliaries, working under the directions of the state health department, can carry on intensive local health education work which would be impossible for the state department without intelligent local cooperation.

To those auxiliaries which agree with these ideas the committee recommends the following outline of study:

(1) Vital Statistics. Their value. Compare the vital statistics of the state with those of other states. Compare the vital statistics of the different counties of the state. Compare the vital statistics of the cities with other cities in the state, and in the United States.

(2) The State Health Department; its organization, and program: (a) For general state work; (b) For cooperating with the counties in improving county health conditions.

(3) The value of the Public Health Nurse.

(4) The County Health Unit as a possible solution of the rural health problem.

Community-wide Conditions Which Affect Health

(5) Milk: Milk standards, why necessary, what milk standards your community needs. How are these needs being met?

(6) Housing: Your community housing laws. Housing conditions as they have developed under these laws and as they affect health. Improvements needed.

(7) General sanitation and its relation to the death

and morbidity rates. Sewage disposal. Water. Garbage. Flies. Dust and street cleaning, etc.

II. PERSONAL HYGIENE.

The improvement of personal hygiene in any community is almost entirely a matter of education. Here again the Auxiliary members must first educate themselves before they can take a safe part in educating the public. The committee, therefore, recommends that the Auxiliary study programs shall include such subjects as:

Health Promotion: Prenatal care.

Child Welfare: Infant and pre-school hygiene. School hygiene. Mental hygiene. Social hygiene.

The advantage to the public of general compliance with health regulations.

The periodic health examination.

Control of communicable diseases.

The entire program should close with a survey of all the private agencies doing health work in the community, and a discussion of the possibility and desirability of centering the direction of all such work in a full-time, scientific health department, under which the private agencies, while still maintaining their identity, would work in complete cooperation.

It is understood that before taking up any of these specific activities, the State or local county Auxiliary should obtain the approval and consent of the State or local county Medical Society.

MRS. JOHN R. NEAL,

President, Woman's Auxiliary to the Illinois State Medical Society.

SCHICK TEST CHART BEING DISTRIBUTED FREE

The U. S. Standard Products Company of Woodworth, Wisconsin, has just brought out a highly interesting color card on the Schick test for diphtheria prevention.

On its face is an actual color reproduction of nine typical reactions to the Schick test absolutely faithful in reproduction and admirably suited for comparative notes.

The card is ideal for reference purposes and attractive enough for either office hanging or even framing. The card is being sent free to physicians upon request to the U. S. Standard Products Company.

DON'T FORGET YOUR INCOME TAX

FEDERAL INCOME TAX PROVISIONS AFFECTING THE MEDICAL PROFESSION

The Revenue Act of 1928, effective as of January 1, 1928, made no change in the rates of tax affecting individuals but did increase the maximum "earned income" allowable from \$20,000 to \$30,000.

Returns must be made to the Collector of Internal Revenue of the district in which the individual affected resides before March 15, 1930, at which time the tax is due and payable. In event the taxpayer desires to pay the tax on the installment basis, the first installment of one-quarter of the tax is due on March 15,

1930 and a quarterly instalment every three months thereafter, namely, June 15th, September 15th, and December 15th.

Responsibility for making these returns is vested with the individual. Blank forms are mailed to all known persons who have previously made returns. Failure to receive such forms, however, will not be accepted as an excuse for failure to file within the time specified by the law.

Under regulations effective last year, all persons deriving incomes from a business or profession, or both, are required to file their return upon Form 1040 (the large form). The small form, or 1040A, is for persons who secure their incomes from wages, salaries or interest alone and where the gross amount is less than \$5,000. The large form, or 1040, is also used by persons reporting an income of \$5,000 or over, regardless of the nature of its source.

The large form, or 1040, was mailed to all physicians by the Collectors of Internal Revenue. If such blank is not received, apply to the Collector of Internal Revenue of the district in which you reside.

RATES OF TAX

Normal Tax Rates for the calendar year 1929 *only*: First \$4,000 in excess of credits, one-half of one per cent; next \$4,000, two per cent; and the remainder of net income four per cent.

After the calendar year 1929, the normal tax rates imposed by the Revenue Act of 1928 will again be effective.

The Surtax Rates: Surtax is computed upon net income before personal exemption dividends and taxable liberty bond interest is deducted. The surtax is not applicable to net incomes of less than \$10,000.00 and upon net incomes in excess of that amount, the tax is levied on a graduated scale. A partial list of surtax rates is shown below:

	Rate of Tax	Tax
Net incomes up to \$10,000.....		
In excess of \$10,000.00 and not in excess of \$14,000.00	1%	\$ 40.00
In excess of \$14,000.00 and not in excess of \$16,000.00	2%	80.00
In excess of \$16,000.00 and not in excess of \$18,000.00	3%	140.00
In excess of \$18,000.00 and not in excess of \$20,000.00	4%	220.00

For example, a person having a net income of \$11,500.00 will be required to pay a 1% surtax on that amount of income in excess of \$10,000.00 or 1% on \$1,500.00, a surtax of \$15.00. A person whose net income was \$14,800.00 would compute his surtax at 1% on the first \$4,000.00 in excess of \$10,000.00 or \$40.00 plus 2% on net income in excess of \$14,000.00, that is, 2% on \$800.00, \$16.00; a total of \$56.00 surtax.

LIABILITY TO FILE

If married, a return should be filed if the net income was \$3,500 or over. If single, a return should be filed if the net income was \$1,500 or over. If the *Gross Income* was \$5,000, or over, a return is required whether married or single, and regardless of the net

amount left over after legitimate expenses are deducted.

Liability to file a return is contingent upon the amount of net income, and not upon a net income with personal exemptions deducted. In other words, if the net income was \$1,500 or \$3,500, single or married respectively, and personal exemptions reduce these amounts, individuals *will not be required* to pay a tax, but *must file a return*.

In case the status of a taxpayer changes during the taxable year, the personal exemption shall be an amount which bears the same ratio to \$1,500 as the number of months during which the taxpayer was single bears to twelve months, plus an amount which bears the same ratio to \$3,500 as the number of months during which the taxpayer was married and living with husband or wife, or was the head of a family, bears to twelve months. For this purpose a fractional part of a month shall be disregarded unless it amounts to more than half a month, in which case it shall be considered as a full month. The amount of personal exemption shall not exceed \$3,500 where the head of a family is married during the taxable year.

DEDUCTIONS AND DEPRECIATIONS ALLOWED

A summary of deductions and depreciations which may be entered in the tax return and many of which are peculiar to physicians alone, are listed below. The number given after each heading refers to the paragraph numbering on the pages following which explain, in detail, how to arrive at the deductions and the depreciations.

DEPRECIATIONS ALLOWED

- Automobile—Professional use (3)
 - 25% cost price
 - Classification includes snowmobiles.
- Instruments (5)
 - 20% of purchase price surgical instruments
- Library (7)
 - 10% on medical books
- Office (6)
 - 10% cost furnishings and fixtures.

DEDUCTIONS

- Automobile—Professional use (3)
 - Cost of upkeep
 - Cost of repair
 - Salary of chauffeur
- Debts (12)
- Dues—Professional (9)
 - Any paid in interest of business or profession
 - County Society
 - State Society—\$10
 - Special Societies
 - College of Surgeons
 - College of Physicians, etc.
- Fire—Losses by (11)
- Insurance premiums (11)
 - State Medical Defense, \$2
 - Other malpractice policies
- Auto—Public liability
 - Auto theft
 - Auto fire

- Theft of professional equipment
- Fire—Professional equipment
- Lawsuits (11)
 - Expense in defending malpractice suit
- Library (7)
 - Subscriptions to medical journals—scientific publications
- Medical meetings (10)
- Medicines—Supplies (5-11)
 - Medicine used in office
- Bandages
 - Laboratory materials
 - Other supplies necessary to operate office
- Office (6)
 - Cost of telephones
 - Cost of heat
 - Cost of light
 - Cost of water
 - Taxi fare, car fare, railroad fare on professional calls
- Office Rental (2)
- Personal Exemptions (1)
- Salaries (4)
 - Nurse
 - Laboratory assistant
 - Stenographer
 - Clerical worker
 - Maids, caring for office and phone
 - Any other employee rendering service in connection with practice or care and treatment of patients
- Scientific Meetings (10)
- Spectacles—Sale of (11)
- Taxes—Licenses (8)
 - Upon any materials required in professional work
 - Licenses to prescribe or use alcohol
 - U. S. narcotic tax
 - U. S. Dues Tax on Club Dues
 - Auto license.
 - Re-registration fees if any
 - Occupational tax if any
- Traveling Expenses (10)

1. PERSONAL EXEMPTIONS ALLOWED

If married and living with wife, or the head of a family for the entire year an exemption of \$3,500 is permitted.

If single, and not the head of a family, the personal exemption is \$1,500. An additional \$400 for each person, other than husband or wife, dependent upon and receiving support from you, is allowed, provided the dependent is under 18 years of age, or incapable of support because of mental or physical condition.

In the case of a change in marital status during the year, the exemptions of \$3,500 and \$1,500 shall be prorated over the period of married and single state.

2. OFFICE RENTALS

If a physician pays rent to another person for office space, he is permitted to deduct the amount from his gross income. This includes regular office space in a rented home provided office hours are maintained. If

he owns his home and maintains an office in it, he cannot claim a deduction for office rent.

3. AUTOMOBILE

The cost of repair and upkeep of an automobile used in professional visits may be deducted. A "snowmobile" used by physicians in making winter rural calls is classed as an automobile and its depreciation and expense deductions are permissible. The salary of a chauffeur, if most of his time is spent in driving to professional calls, may also be deducted. Sums spent for taxi hire, car fares, etc., while on professional calls, may be deducted. The cost of a business automobile may be depreciated.

If the total cost of an automobile is \$2,000 and its estimated period of usefulness is five years, \$400 or 20 per cent of the cost may be deducted each year for 5 years.

4. ASSISTANTS

Deductions are permitted for the salary of a nurse, laboratory assistant, stenographer or clerical worker in the office so long as the duties of these are in connection with the physician's professional work. Wages paid to maids taking care of the office, answering the telephones are also deductible, as are any funds paid to employees for services rendered in connection with practice, or care and treatment of patients.

5. MEDICINES, INSTRUMENTS, SUPPLIES

Medicines used in the office to treat patients, bandaging, laboratory materials and all other supplies necessary to operate a physician's office may be deducted. Upon surgical instruments, one fifth of the purchase price may be deducted annually for five years under depreciation account.

6. GENERAL OFFICE EXPENSE

Cost of all telephones used in the office is exempt and may be deducted. Expenditures for heat, light and water for the office may be deducted. An annual depreciation of 10 per cent of the cost of office furnishings and fixtures may be deducted.

7. LIBRARY

Most physicians have a more or less extensive library. Courts have held that medical books during the course of ten years become out of date. For this reason, a 10 per cent depreciation may be deducted annually.

8. TAXES, LICENSES

Any taxes paid upon materials required in professional work are exempt. All licenses which the physician is required to take out, may be taken off the gross income reported. This includes the license to prescribe or use alcohol, narcotic tax, automobile license, local occupational taxes, etc.

9. PROFESSIONAL DUES

Dues paid to professional associations to which, in the interest of his business or profession he belongs, are exempt and may be deducted. Also subscriptions

to all medical journals or scientific publications are exempt.

10. TRAVELING EXPENSES

Traveling expenses necessary for professional visits to patients are deductible. Traveling expenses in bona fide attendance upon scientific meetings are deductible (Jack vs. Commissioner of Internal Revenue—Board of Tax Appeals, Oct., 1928). Expenses in attending post-graduate medical courses are not deductible.

11. MISCELLANEOUS

Laboratory Expenses—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire, etc.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft or professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits—Expenses incurred in the defense of a suit for malpractice are deductible as business expense. Expenses incurred in the defense of a criminal action, however, are not deductible.

Sale of Spectacles—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should, in such cases, show charges for services separate and apart from charges for spectacles, etc.

12. WHEN TO DEDUCT DEBTS

If the physician's books are kept according to the "Cash Receipts and Disbursements" system, he may not charge off any unpaid debts because "if his books are kept according to this system, he is only reporting as gross income those accounts which have proved to be good and therefore bad accounts cannot be deducted because they have already been excluded."

If the books are kept upon an "accrual basis" (that is if the basis of expense actually incurred and payable

even though not yet paid, or income earned although not yet collected), it is permitted to charge off on the income tax blank all debts which have been definitely ascertained to be worthless, and charged off on the books or records, during the fiscal year covered by the report.

In the same way, the physician is permitted to claim deductions for all other expenses within the scope of his profession, and the amount of his tax is determined on the *net income* which remains after all these items have been deducted.

ITEMS NOT REPORTABLE AS INCOME

Allowances received under the War Risk Insurance act; bequests; damages received in personal actions; dividends on stock of federal reserve banks, land banks and intermediate credit banks; dividends from exempted building and loan associations up to \$300; dividends from corporate earnings accumulated prior to March 1, 1913; gifts; inheritances; insurance proceeds paid by reason of death of the insured (where a policy matures during life the amount of the proceeds, in excess of the net premiums paid, is taxable income); state court jury fees; state court receivership fees, life insurance proceeds; and stock dividends.

All interest received from obligations of a state or political sub-division thereof; from securities issued under the Farm Loan act; interest on Liberty $3\frac{1}{2}\%$ Bonds and U. S. Bonds issued prior to September 1, 1917, and interest on the obligations of the possessions of the U. S. need not be included in the computation of gross income.

Interest received on Liberty 4% and $4\frac{1}{4}\%$ bonds and Treasury $3\frac{3}{8}\%$, $3\frac{3}{4}\%$, 4% and $4\frac{1}{4}\%$ bonds are exempt up to \$5,000 aggregate principal. All interest received on such obligations in excess of \$5,000 total holdings is reportable for surtax purposes. All interest received on U. S. Treasury notes (as distinguished from Treasury bonds), must be reported. However, all interest received from obligations of the United States, which is reportable as income, is subject only to the surtax.

EARNED INCOME

For several years students of income taxation have contended that income derived from the personal endeavor of a tax payer should not be taxed at as great a rate as is income derived from other sources. This fact is now recognized in the law which provides that the income shall be first computed in the usual way and then it shall be recomputed on the earned income as if that income were the entire income.

The term "Earned Income" means wages, salaries, professional fees, or compensation for services.

The first \$5,000.00 of net income is considered earned income, no matter from what source derived. The 20 percent limitation placed on net income derived from a business where both capital and personal service are material income producing factors, is not applicable to physicians whose income is held to be directly attributable to their rendition of personal service. However,

in no case may the earned income be considered to be more than \$30,000.00

It is anticipated that the earned income credit provision of the law will create a great amount of confusion in the computation of tax and for the benefit of our readers an example applicable to the income of a physician is given below:

Net income from practice	\$ 8,000.00
Net income from rents	500.00
Net income from sale of property.....	5,000.00

Total net income.....\$13,500.00

Taxpayer married with two dependents under 18 years of age.

COMPUTATION

Net income	\$13,500.00
Marital exemption \$3,500; dependent exemption \$800	4,300.00

Subject to normal tax.....	9,200.00
First \$4,000.00 subject to normal $\frac{1}{2}\%$ tax.....	4,000.00

	5,200.00
Second \$4,000 subject to normal 2% tax.....	4,000.00

Remainder subject to normal 4% tax.....	1,200.00
Normal $\frac{1}{2}\%$ tax.....	20.00
Normal 2% tax.....	80.00
Normal 4% tax.....	48.00
Surtax 1% on net income in excess of \$10,000.00....	35.00

	183.00
Earned income credit (see computation below).....	4.62

Total tax due.....	178.38
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COMPUTATION OF EARNED INCOME CREDIT

Earned income (income from practice).....	8,000.00
Exemption	4,300.00

Subject to normal tax.....	3,700.00
Normal $\frac{1}{2}\%$ tax.....	18.50
Earned income credit $\frac{1}{4}$ of tax on earned income or	4.62

—Wisconsin Medical Journal.

UNDESCENDED TESTIS

In the Annals of Surgery, November number, Dr. Bevan describes his operation for undescended testis, which he has practiced for the past 30 years. He advocates its use at a much earlier age than formerly, in fact, any time after one or two years of age. The operation is tersely described, and consists of the transverse division of the vaginal process one inch below the internal ring, dissecting it up, and ligating it as the sac of an inguinal hernia, then stripping downward from the transverse division of the vaginal process the lower part and closing it with a purse string suture so as to leave it as the tunica vaginalis of the testis, and severing the fibrous bands which prevent the elongation of the cord, making a large pouch in the scrotum for the testis which is fastened in with a cat-gut purse string which must not be tight enough to endanger the blood supply of the testis. The wound is closed as an inguinal hernia with the cord at the deepest point in the wound. The entire article is well worth a careful study.

PERFECTED POISON FOR RATS ANNOUNCED

The U. S. Department of Agriculture announced recently the discovery of a rat poison that is almost ideal. The preparation is made from powdered red squill. It is said to have elements of safety to human life and domestic animals, economy and effectiveness that other preparations do not possess. We quote:

The value of red squill as a rat poison has been known in Europe for many years, but only within recent years has this plant substance been developed for that purpose in this country.

Grows Wild

There are two varieties of squill that are used commercially—white and red. The white squill is used in human medicine and the red is used as a rat poison, being a specific poison for rats.

For several seasons the United States Department of Agriculture, through its bureau of Biological Survey, Chemistry and Soils, and Plant Industry, has been working to develop a potent red-squill preparation for the effective destruction of rats, and it presents the results of this work in a new bulletin "Red-squill Powders as Raticides," Technical Bulletin No. 134-T. Red squill, says the bulletin, is an almost ideal rat poison, being relatively safe, economical, and effective, and these are requirements which the raticides in most general use today—arsenic, barium carbonate, phosphorus, and strychnine—do not so fully meet.

Safe for Pets

The investigators concluded from their studies that powdered red squill is toxic to rats but that white squill is not; and that to cats, dogs, chickens, and pigeons red squill is nontoxic under normal conditions when exposed in the concentrations recommended for rat poisons, as shown by the fact that food poisoned with squill either was not eaten by these animals, or, if eaten, was promptly vomited.

One method of preparing red-squill powders that yielded a more toxic product than others is described in detail in the bulletin and is recommended for commercial use.

This report is of special interest to pharmacologists and manufacturers of raticides, as it gives basic information for the further development of red-squill preparations, and making available to the public a rat poison that can be safely used in places where the use of other poisons has proved too dangerous to human life and domestic animals.

The publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents per copy.

EXTRINSIC NERVOUS CONTROL OF LARGE BOWEL

A. J. Carlson, Chicago (*Journal A. M. A.*, Jan. 11, 1930), has investigated this problem in dogs and monkeys. He is convinced, on the basis of many experiments, that vagus efferent fibers do not reach or influence the large bowel in the dog, but vagus motor

fibers seem to reach the cecum and the appendix in a small region of the large bowel, close to the cecum in the monkey. The vagus motor and inhibitory fibers reach and influence the whole length of the small intestine in the dog, not through the wall of the intestine but by the way of the mesentery connections. Stimulation of the peripheral end of the hypogastric nerves has opposite effects on the ascending and transverse colon. If this portion of the colon is relatively atonic at the time, the stimulation induces a powerful contraction of both the circular and the longitudinal musculature. On the other hand, if this portion of the intestine is in a fair degree of tonus or rhythmic contractions at the time of the stimulation, the tonus and motility are inhibited. Irritation of the sacral sympathetics in the dog produces a motor effect on the circular and longitudinal musculature over the entire large bowel. This region, instead of having no motor innervation, has a double motor innervation (sacral and hypogastric).

KIDNEY FUNCTION IN MORPHINE ADDICTS

Of 177 patients admitted for acute and chronic morphinism, Robert S. Ackerly, New York (*Journal A. M. A.*, Jan. 11, 1930), found that 174, or 98.4 per cent., showed no signs or symptoms of nephritis or kidney dysfunction. Seventeen, or 9.6 per cent., showed urine containing albumin, casts or red blood cells, but nine of these had diseases that might explain the finding in the urine, and none of the seventeen had signs of urinary dysfunction; eleven patients had albumin and casts; four patients had albumin, casts and red blood cells, and two patients had red blood cells and casts. Three patients, or 1.6 per cent., of 177 exhibited signs, symptoms and a urinalysis pointing to nephritis clinically; one of these had a floating kidney, and one was presumably a cardiac patient. There is no evidence to show that there is a constant relationship between the administration of morphine and the manifestation of kidney dysfunction. Morphine should therefore be used whenever indicated without fear of renal complications secondary to its use.

PRACTICAL ACCURACY AND CONVENIENCE IN TRIAL LENSES

In 1878 the sixth section of the American Medical Association, devoted to diseases of the eye, ear, nose and throat, was established and Herman Knapp was chairman. In 1879 the first meeting was held at Atlanta, Ga. From that time to this say Edward Jackson and Donald H. O'Rourke, Denver (*Journal A. M. A.*, Jan. 11, 1930), the trial case and its use have never been the subject of a paper, or discussion, before the section. Their paper is devoted wholly to the problem of the practical accuracy of such lenses; the obliquity of glasses to light; the size of lenses; trial frames; supplementary lenses, and lenses needed in the trial case.

Original Articles

INTERDEPENDENCE OF THE ADRENALS, THE THYROID GLAND AND THE SYMPATHETIC NERVOUS SYSTEM WITH CLINICAL APPLICATION*

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INTRODUCTORY NOTES

It is a great pleasure to meet the members of the North Branch of the Chicago Medical Society and to offer for discussion a conception of the interrelating functions of the adrenals, the thyroid, and the nervous system which is based upon the Bipolar Theory of Living Processes. As the months pass and additional researches are made, evidence in support of that theory accumulates. Before offering the thesis of this evening's discussion I should like to state that the evidence, upon which the statements I shall make are based, has been accumulated through many years of experimental researches in my laboratories at Western Reserve University and Lakeside Hospital, and at the Cleveland Clinic Foundation. The physical measurements which have been in progress for the past 11 years have been subjected to most rigid scrutiny. Dr. Hugo Fricke, who in our laboratory developed the formulae for and measured the thickness of the membrane of red blood corpuscles is a well-known mathematical physicist. Dr. R. Beutner, of the University of Louisville, has scrutinized our methods and has himself, in our laboratories, added valuable information regarding the relation between the stainability of cells and the electric potential. Professor Dayton C. Miller and Professor W. R. Veasey, of the Case School of Applied Science, are consultants of our research department and have examined our methods and studied our measurements and have given them their approval. The measurements upon which special stress will be laid tonight have been made in our laboratories by Dr. Maria Telkes, Miss Amy F. Rowland, and Miss Helen H. Douthitt. These researches are still in progress, but it appears to us that sufficient evidence

has accumulated to submit these findings and our conclusions therefrom to you.

The nervous system may properly be considered as including not only those organisms and structures generally included in the central and vegetative nervous systems but also the adrenal and the thyroid glands since the latter together with the former control the adaptive energy transformation of animals. Adaptive energy transformation is the one outstanding factor that distinguishes the plant from the animal. An animal may be regarded, therefore, as a higher plant to the equipment of which has been added a mechanism for adaptive energy transformation, that is, the transformation of potential into kinetic energy, i. e., in animals may be considered a motorized plant. I still think this system may not illogically be designated as a "kinetic system."

The most outstanding and unique example of a continued activation of this group of organs which results in continued increase in energy transformation is a state of hyperthyroidism—more appropriately designated "hyperkineticism."

In hyperthyroidism not only is there a continued increase of energy transformation but from time to time there appear crises during which the transformation of energy is temporarily increased still further. I propose to discuss the nature of these thyroid crises and their exciting causes, the mechanism that produces them, their peculiar setting, and the factors that govern them, and to offer evidence in support of the conception that hyperthyroidism is not primarily a disease of the thyroid gland but is rather a disorder of the entire kinetic system as defined above. In a thyroid crisis the organism is driven so intensively and its functions are so magnified that the crisis serves as a physiologic microscope through which are revealed more clearly certain functions of certain organs.

The clinical analysis of a thyroid crisis shows that it can be precipitated by any one of only eight factors, six of which are intraorganic, that is, originate within the organism itself—while two may be applied artificially. The six inherent factors are (a) emotional excitation, such as fear, anger, worry, etc., (b) foreign and split proteins, such as infection, wound secretion, etc., (c) asphyxia, (d) hemorrhage, (e)

*Read at a meeting of the North Side Branch of the Chicago Medical Society, March 6, 1929, Chicago.

pain, (f) physical exertion. The two artificially produced factors are (a) the induction of inhalation anesthesia, and (b) the injection of adrenalin.

Whether the crisis be precipitated by a single one or by several of these factors, or whether the crisis occurs merely in the natural course of the disease, the symptoms, and in fatal cases the mode of death, are identical. There must be, therefore, some common cause which is activated by these divergent exciting conditions. What common factor in asphyxia, hemorrhage, physical injury, physical exertion, emotional strain, infection, is responsible for the thyroid crisis? Exclusive of the injection of adrenalin each of the factors enumerated above produces an increased output of the specific hormone of the adrenal glands, as has been proved by the researches by Cannon and others as well as by ourselves which have shown that the adrenals are activated by every activation of the central nervous system.

Moreover, it is significant that no other natural factor such as rest, sleep, food and water, heat or cold, and no drug such as a sedative, a narcotic, digitalis, strophanthin, atropin, sodium bicarbonate and glucose, a cathartic, calcium or magnesium, can produce a thyroid crisis. Even the injection of iodine or of thyroid extract can not produce a thyroid crisis. Moreover in the absence of the thyroid gland or when after thyroidectomy hyperthyroidism has been replaced by myxedema, each of these specific excitants loses its effect. In the absence of the thyroid gland or in myxedema the injection of adrenalin loses its specific effect. A thyroid crisis under such conditions cannot be produced even though any of these factors may destroy the organism and produce death.

The symptoms of hyperthyroidism and of the crises of hyperthyroidism are identical with the symptoms of hyperadrenalism—dilated pupils, flushed skin, sweating, increased metabolism, increased action of the heart. The injection of adrenalin of itself alone produces these symptoms, and each of these symptoms is present in hyperthyroidism; the injection of adrenalin in the presence of hyperthyroidism causes an increase in every one of these symptoms. These symptoms in themselves betray the intermediary between the adrenals and the thyroid gland. The

adrenals act through the nervous system upon the thyroid gland; the thyroid gland acts through the nervous system upon the adrenals—each of these three depends upon the other two. It is for that reason that we consider these ductless glands as being inherent parts of the nervous system itself.

Further evidence that neither the nervous system, the adrenals, nor the thyroid gland can be considered alone is found in the following facts: (a) Hyperthyroidism has never been seen in a case of Addison's disease, (b) the excision of one adrenal gland temporarily lessens the symptoms of hyperthyroidism to a degree comparable to the removal of one lobe of the thyroid gland, (c) in myxedema, adrenalin loses most of its physiologic effect, (d) deep narcotization with morphine nullifies the effect of adrenalin, (e) no case of hyperthyroidism has been observed in a cretin or in the presence of a normal thyroid gland, (f) the division of the innervation of the thyroid gland cause a marked control of the disease, (g) physiologic rest profoundly benefits a patient with hyperthyroidism, (h) excitation of the nervous system is the most potent cause of the disease and of the crises of the disease. Finally, each of the six specific factors enumerated above which may cause a crisis of hyperthyroidism are also common exciting causes of the disease. These six factors produce their protean effects primarily by activating the nervous system which in turn activates the thyroid gland and the adrenals. One might as well try to separate the nucleus and the cytoplasm of a cell, or the negative and positive plates of a battery and expect either to operate alone as to expect the adaptive transformation of energy to continue in the absence of the nervous system, the adrenals, or the thyroid gland, each of which is an essential part of the organic machine.

It would seem more profitable to identify and study the energy-transforming system as a whole, and to find some new designation for the disease, rather than to relate it to a single organ which does not originate the disease but only collaborates in its origin and in its continuation.

The outstanding characteristic of hyperthyroidism is the facilitation and acceleration of the production and discharge of potential energy through the collaboration of a definite group of organs. As the result of this acceleration the

energy-transforming system is speeded up, and for this reason I believe that a better term than hyperthyroidism to apply to the disease would be "hyperkineticism." This name does not assume that we are in possession of all the factors involved in this protean disease but that it would seem more descriptive than our present term.

Let me now offer certain experimental evidence as to the inter-relation of the nervous system, the adrenals, and the thyroid gland.

Years ago we found that the administration of iodine or of thyroid extract produced an early hyperchromatism of the brain cells followed by progressive chromatolysis. The administration of a single dose of adrenalin produced hyperchromatism of the brain cells; the repeated administration of adrenalin was followed by chromatolysis of the brain cells. Significant as these findings were they have become increasingly so as the result of investigations now being made in the laboratories of the Cleveland Clinic by Dr. Beutner who has found that the stainability of cells is apparently a direct indication of their electromotive force or potential. Dr. Beutner is investigating this point by the construction of certain artificial systems consisting of organic substances, which react to different stains like the hyperchromatic and hypochromatic brain cells in our experiments and produce an electromotive force which varies with the stainability as we have found the electromotive force of a tissue to vary with its stainability.

Since iodine is the essential content of the product of the thyroid gland, and in view of the specific effect of this product on metabolism, we would suspect that it governs the electric permeability of the cells of the body. In our researches we have found that after a latent period of 12 or more hours, iodine and thyroid extract each increases the electric conductivity and capacity of the organs and tissues of the body, in particular of the brain. In physical terms the change in the conductivity and capacity of a tissue signifies a change in the activity of that tissue. These physical changes, like the clinical changes due to thyroid activity, are lasting and not fleeting. Increased conductivity and increased capacity are associated with increased functional activity. These changes alone would

increase oxidation hence would increase basal metabolism.

These findings are comparable to those in similar physical measurements of plants, of growing tumors, of fertilized ova, of the ameba, etc. It may be urged that what we have measured is a change in the concentration of the electrolytes in the tissues and cells or changes in blood supply. It is true that the changes in conductivity and capacity which we have measured are in part due to changes in electrolytic concentration, but changes in electrolytic concentration constitute an essential part of the mechanism of stimulation and appear coincidentally with changes in the permeability of the cell membranes. Moreover, in our experiments, changes in conductivity and capacity have been found in tissues after death, when such changes must be independent of the circulation. These electrical changes run parallel with the clinical phenomena.

Our experiments have shown that the effect of adrenalin on the capacity and conductivity of tissues and organs is wholly different from the effect of thyroid extract and of iodine; that is, while the effects of thyroid extract and of iodine are not manifested until after a considerable latent period, adrenalin causes an immediate and a striking change in capacity, temperature, and conductivity. Moreover, the effects of adrenalin last for only a few minutes while the effects of thyroid extract and of iodine last for hours and days.

The most striking characteristic of the adrenalin effect, however, is its unexpected selective action on the organs and tissues of the body; that is, adrenalin causes a sharp rise in the conductivity, temperature and capacity of the nervous tissue, but shows the opposite effect on the conductivity, temperature and capacity of all other tissues, with one notable exception,—namely, the medulla of the adrenal gland itself. At first this highly selective action of adrenalin on the tissues and organs seemed incomprehensible until it occurred to us that differences in the potential of the organs of the body might well depend on this very effect.

We would expect that iodine and thyroid extract would raise the potential of the cells, and experiments performed in our laboratory have proved such to be the case. If iodine or thyroid

extract increases the capacity of the cells and also the electric load of the cells then we would expect that the adrenal and the nervous system would discharge the cells—would diminish their potential—and our experiments have indicated that this is the case.

As a result of our experiments it would appear that the organism has been evolved on the principle of electric control, and that it is the function of the adrenal glands and of the vegetative nervous system to establish and to maintain and adaptively to change the differences in potential among the different organs and tissues, in order to meet the conditions of struggle and survival, such as fighting or escaping, mating and procreating, combatting infection, etc. If this conception be true, then not only is there a collaboration between the adrenals and the thyroid but there is a collaboration among all of the organs and tissues which are concerned not only with the struggle of life but with the maintenance of life itself. In accordance with this conception, if we were to measure the difference in potential between various organs and a neutral tissue such as fascia, we would expect to find that during life and consciousness a certain difference exists and that at death this difference is cancelled. We would expect to find that adrenalin would specifically alter differences in potential in the normal animal and that in myxedema it would exert but little effect on the difference in potential. We would expect that alterations in potential would be related to the physiologic activity of the various organs; and that the activity of the organs would be related to the thyroid hormone, which controls the conductivity for the longer periods, and to adrenalin, which controls the conductivity for shorter periods. These theoretical assumptions have been proved to be facts by the experiments performed in our laboratory by Dr. Telkes and Miss Rowland.

We may assume that the thyroid hormone by increasing the permeability increases the activity of the cells and organs, of the brain, in particular. Increased permeability would make more effective every kind of stimulation. This would be one of the essential factors of nervousness—perhaps the mechanism by which it is produced.

In myxedema, on the other hand, the conductivity, capacity and potential are decreased far

below the normal level; and in consequence, the permeability, hence the facility of stimulation is decreased proportionately. This would explain the decreased metabolism, the depressed facility for stimulation and the decreased bodily activities—dullness and lethargy—in clinical cases of myxedema. And as a climax to these observations we have found that when an animal is in myxedema, adrenalin has lost its striking control over the conductivity, capacity and potential—a finding which parallels the clinical observation of the lack of effect when adrenalin is injected into myxedematous patients.

Moreover, and of peculiar significance, has been our discovery of a specific reaction of the medulla of the adrenal gland itself to the injection of adrenalin. We have found that the injection of adrenalin into the vein of the ear of a rabbit causes a sharp rise in the conductivity and the capacity of the medulla of the adrenal—this effect being as striking as the effect of adrenalin on the brain, and in the same direction. It would appear from this finding that the medulla of the adrenal functions as nerve tissue; perhaps it is the brain of the vegetative system, its probable function being to charge up—to energize the vegetative system. The embryologic origin of the medulla, the type of its cells and the kind of tumors that arise in it, all point to the same inference.

In his illuminating work on the adrenal gland and his interpretation of its function along the lines of evolution which were referred to in my Ether Day address, Cannon surely took an important step in the direction of this conception.

If we are correct in our belief based upon clinical and experimental investigations that the single agent which causes the acute exacerbations of hyperthyroidism is the adrenal gland, then it would follow that by the removal of one adrenal gland in cases of hyperthyroidism, the factor of safety of the patient should be increased, that is, the removal of one adrenal like the removal of one-half of the thyroid gland should deduce the phenomena of hyperthyroidism. It may at once be objected that the factor of safety of the adrenal tissue is so great that the removal of one adrenal would show no effect. In normal cases this would be true, but in hyperthyroidism, the adrenal, like the thyroid, has had its factor of safety fully taken up by ex-

cessive action and one would expect, in accordance with our conception at least, that by the removal of one adrenal, as by the removal of half of the thyroid gland, the hyperthyroid phenomena would be correspondingly reduced.

We have removed one adrenal gland in ten cases of hyperthyroidism, and in those ten cases the immediate clinical results were comparable with those which follow the removal of one lobe of the thyroid gland. The pulse rate was lowered, the nervousness, sweating and weakness decreased, the lost weight was regained, the untouched thyroid gland diminished in size and grew firm in texture, as after a successful ligation or a successful rest cure; and of equal significance, although the operation was much more severe and of longer duration than a thyroidectomy, there was but little postoperative reaction, that is, little so-called postoperative hyperthyroidism. And why should this not have been the case, for according to our point of view, part of the electric generative plant of the vegetative nervous system was removed? The result of this procedure was not as lasting as after the removal of one lobe of the thyroid gland. This evidence is too meager to be conclusive and is offered only as so much evidence in favor of our general thesis.

How interesting that the symptoms of hyperthyroidism are so completely "adrenal" in nature. The driven heart, the activated nerves, the increased metabolism, the sweating, the vasomotor instability, the dilated pupils, the increased pulse pressure, all of these show a sensitization due to adrenalin. What is accomplished so strikingly by merely cutting off the sympathetic nerve supply to the thyroid gland may apparently be achieved on a much greater scale by the removal of one of the generators instead of by merely severing some of the feed wires.

The thyroid is governed, at least largely, by its innervation; innervation is regulated largely by the adrenals; the adrenals are controlled by the brain and nerve centers, although chemical activity probably plays a role. The thyroid certainly cannot originate hyperplasia, the thyroid has hyperplasia imposed on it; the adrenal glands cannot stimulate themselves, stimulation is imposed upon them; the nerve receptors cannot engage in self-excitation, excitation is im-

posed on them by the physical and chemical forces of the external and internal environment. The entire nerve mechanism, the adrenals, the thyroid, and in a secondary sense other ductless glands, act reciprocally; that is, nerve tissue, the adrenals and the thyroid tissue collaborate in a stepping-up process—a stepping up of activity. In certain individuals, because of some previously existing unknown factor, some chemical or physical unbalance, the normal controls become inefficient or are lost—and a reciprocal excitation continues after the environmental excitation that initiated the activity has ended.

The thesis which we have presented is supported not only by laboratory findings but by clinical observations. The patient with hyperthyroidism and the patient with myxedema together present conclusive evidence of the interrelation—interdependence—which we believe to be present among the adrenals, the thyroid gland, and the nervous system. Any theory regarding the operation of the human mechanism must stand or fall according to the evidence offered in the clinic. The patient presents the final criterion as to the value of laboratory evidence. On that criterion we are prepared to rest.

CLINICAL INVESTIGATION AND THE PRACTITIONER OF MEDICINE*

N. S. DAVIS, III, M.D.

CHICAGO

Since the earliest times the chief advances in medical knowledge have come from those who were actively taking care of the sick. The Egyptian physicians of the second century before Christ had a knowledge of clinical surgery which was passed on to the Greeks who also described arthritis deformans, trachoma, and various parasitic infections. They were familiar with many therapeutic agents, some of which were used with intelligence and discrimination by Hippocrates and his disciples. The inhabitants of Asia Minor and the Eastern European countries of this and earlier periods were versed in medical matters, though oftentimes superstition modified the type of treatment and the methods used. As a matter of fact there are in our medical vocabulary many terms that can be

*Read before the Section on Medicine, Illinois State Medical Society, Peoria, May 23, 1929.

traced to the languages of prehistoric peoples of the Eastern Mediterranean.

Greek medicine, which was at its height in the time of Hippocrates about 400 B. C. Aristotle (384-322 B. C.), gave to medicine the beginnings of botany, zoology, comparative anatomy, embryology, teratology, logic, and taught anatomy by dissection of animals. After this, there was a Greco-Roman period which did not add much to medical knowledge, but furnished two writers, Celsus and Galen, from whose works most of our knowledge of ancient medicine is derived. Galen, in addition to being a writer, was the first experimental physiologist and made numerous contributions to our knowledge of the physiology of the nervous system and of respiration. He was also a clinician and differentiated pneumonia from pleurisy, first described aneurysm, and differentiated between the traumatic and the dilated form and wrote extensively on phthisis and its treatment by diet and climatotherapy.

After Galen came the Dark Ages in Medicine as well as in learning and culture. Hospitals and sick nursing had their inception during this period. With the Renaissance came Linacre, who translated Galen and gave his works to the physicians of the 15th century. Paracelsus taught physicians to substitute chemical therapeutics for alchemy and the "four humors" of Galen. Leonardo da Vinci, the great artist and scientist, was the foremost anatomist of his time and was the originator of cross-sectional anatomy. Vesalius at the beginning of the 16th century, really made anatomy a living science and in so doing made the greatest contribution to medicine between the time of Galen and Harvey.

Then comes the 17th century and with it William Harvey and the discovery of the circulation of the blood. Like many of the research workers of today, Harvey was an indifferent practitioner who lost much of his practice when he published "*De Motu Cordis*." Most of the other advances during this period were in anatomy, though de Graaf did some important work on the physiology of digestion.

In the latter half of the 17th century internal medicine took a new turn because of the work of Sydenham, who revived the Hippocratic methods of observation. He regarded disease as

a developmental process, running a regular course, with a natural history of its own, and believed that scientific theories were of little value to the practitioner since at the bedside he must rely on his powers of observation and fund of experience. He described accurately the malarial fevers, scarlatina, measles, broncho-pneumonia and pleuropneumonitis, dysentery, hysteria, gout and chorea. His description of gout is one of the classics of medical literature. Sir Thomas Brown, who wrote Sir William Osler's favorite book "*De Religio Medici*," was a contemporary of Sydenham.

In the 18th century medical knowledge began to increase by leaps and bounds. Boerhaave taught chemistry, physics, and botany as well as bedside medicine, and gave the first special course in ophthalmology. Haller founded modern physiology. Hales devised the first manometer. Hewson contributed to the knowledge of the physiology of the blood. Black, Priestly, and Lavoisier added greatly to the knowledge of physics and chemistry, particularly with respect to oxygen and carbon dioxide and their interchange in the lungs. The Monros of Edinburgh made that city famous as a medical center, particularly for the teaching of anatomy. Wolff started the science of embryology. Smellie first used a manikin in the teaching of obstetrics. William Hunter was a famous anatomist and obstetrician and his brother, John Hunter, who put surgery on a scientific basis and was a great teacher, was the first English surgeon to compare with the French. Percival Pott who described Pott's fracture and Pott's disease was also a leading surgeon. Auenbrugger was the first modern to describe percussion as a method of physical examination, though his work was not generally appreciated till years later when Corvisart took it up. Morgagni introduced the anatomical idea into medical practice. Matthew Baillie, the last inheritor of the "Gold-headed Cane," was among the first to attempt to correlate post mortem and clinical findings. And then we come to William Withering, who first used digitalis in the treatment of heart disease. His "*Account of the Fox-glove*" is a pharmacological classic. Heberden, who described the well-known nodes on the fingers in arthritis, was also a leading clinician. And there was Edward Jenner, whose classical experiments proved the

value of vaccination in the prevention of small-pox, a disease so prevalent in those days that it was said that "everyone fell in love and had the pox."

Some American names come into prominence for the first time during the latter part of this century. John Morgan, T. Cadwalader, William Shippen, and Benjamin Rush of Philadelphia, John and Joseph Warren of Boston were probably the best known physicians of the country prior to 1800.

During this century many syndromes were carefully described and their diagnosis made possible, though their etiology was, of course, not understood and little was known regarding their management. In many instances there is little more known today than there was at that time. For example, Heberden's nodes are generally recognized, but their etiology is an open question.

With the 19th century came tremendous advances in all branches of science. In medicine the French school, Broussais, Chomel, Louis, Laennec were most prominent during the first half of the century. Louis did much accurate work in pulmonary tuberculosis and differentiated and named typhoid fever. He also brought forward the importance of good statistics as instruments of precision where proper experimental methods are wanting. Laennec invented the stethoscope and was an expert pathologist and clinician. He correlated the signs elicited by percussion and auscultation with the underlying pathological anatomy, and as a result was able to differentiate various types of pulmonary and cardiac disease. Percussion had been brought into prominence by his contemporary, Corvisart, who had revived Auenbrugger's work. In Ireland at this period we find Cheyne and Stokes, whose names are associated with a type of respiration; Adams, who described heart block; Graves, who described exophthalmic goiter; and Colles, Corrigan, and Wallace, who introduced potassium iodide in the treatment of syphilis.

In England, Richard Bright, who differentiated renal and cardiac edema and described essential nephritis, Addison who described pernicious anemia and Addison's disease, and Hodgkin and Parkinson were the chief contributors to medical knowledge. Wunderlich was the real founder of clinical thermometry and Skoda made

contributions to our knowledge of percussion and auscultation.

Rokitansky did monumental work in pathology, especially of the heart and blood vessels. In the United States Oliver Wendell Holmes proved the contagiousness of puerperal fever in an essay presented in 1843, which was confirmed by Semmelweiss five years later. Long first used ether anesthesia about 1842, but as he did not publish any account of this work, the credit for its discovery goes to Morton, Warren and Bigelow, whose experiences with the drug were published in 1846. Wells started using nitrous oxide at about the same time. Drake, Beaumont, the Jacksons, and Mitchell were other prominent physicians of this period. Beaumont's work on the gastric secretions made possible by the injury to Alexis St. Martin was the first great contribution of American medicine to the world. McDowell and Sims must also be mentioned.

During the latter half of the nineteenth century developments were so rapid and contributors so numerous, that it is impossible to even name all of the more important ones in the time at our disposal. The publication of Virchow's "Cellular Pathology" in 1858 marked a new epoch in medicine. It was followed in a short time by the discovery of bacteriology by Pasteur, and its application to surgical procedure by Lister, and to the etiology of disease by such men as Koch, Löffler, Klebs, Welch, Flexner, and Vaughan. Surgeons became more prominent with the development of antisepsis and such names as Billroth, Esmarch, Paget, Hutchinson, Horsley, Gross, Fenger, McBurney, Park, Fitz, Tait, Kelly, Simpson, Fuchs, stand out. In medicine, Trousseau, Traube, Kussmaul, Nothnagel, Naunyn, Ewald, Muller, Albutt, Osler, Davis, DaCosta, Billings, Bowditch, Cabot, Jacobi, Charcot, Marie, Jackson, Mitchell, Brunton and Hare stand out. It was during this period that Darwin, Huxley and Mendel brought out their epoch-making researches in biology which are so important in medicine. In physiology there were Helmholtz, Claude, Bernard, Ludwig, and many more. In physiological chemistry were Hoppe-Seyler, Salkowski, Kossel and others.

Since the beginning of the 20th century there have been further advances in medicine, for the most part due to the work of men who were devoting their whole time to investigative work

in the non-clinical branches. There has been a tendency on the part of those in active practice to relegate the major portion of this work to men who are working in pure science, and confine their own activities to the treatment of the sick and applying to clinical medicine such of the results of research in pure science as have a clinical aspect. It is true that it is up to the pure scientist to solve many of the problems that remain unsolved. Such problems as the development of specific therapeutic agents must, however, have the cooperation of the clinician. The etiology of the acute or chronic infectious diseases whose cause is still unknown will probably be solved in the laboratory.

But our most important problem today seems to be with diseases of a different sort, the diseases that come with advancing years, cancer, cardiovascular-renal disease, diabetes, and the like, all chronic conditions regarding the etiology, life history, and treatment, of which little is known. What is known about the treatment of diabetes is the result of investigation in dietetics by clinicians such as Naunyn, vanNoorden, Joslin, Woodyatt, the discovery of insulin by Banting and Best and its application as a therapeutic agent by the same group of clinicians. But the problem of diabetes will not be solved completely until we know more of its early symptoms, its cause and its complete history and these are aspects on which the medical profession has been working since the days of ancient Hindu medicine, eight to ten centuries before Christ.

Cancer has also been studied for many centuries and yet we are almost as much in the dark as to its cause and early symptoms and treatment as we ever were. The cardiovascular-renal group are relatively new, especially those cases in which arterial hypertension is an important physical finding. The hypertensive states are new because the general use of sphygmomanometry is scarcely twenty years old. How can the laboratory worker, the consultant, who as a rule sees only well-developed disease conditions, or the teacher who restricts his work to hospital and out-patient clinics, learn about the early symptoms of such diseases unless by analogy with findings in experimental animals whose life history is perhaps three score months and ten instead of three score years and ten?

The time seems to have come when the medical profession must undertake investigation based on careful observation which was emphasized by Hippocrates and Sydenham, combined with the statistical method brought out by Louis. It will be almost impossible for one clinician to gather sufficient data to solve one of these problems in any or all of its various aspects, therefore these problems should be undertaken by the members of the profession working in cooperation.

Of course, Mackenzie was able to learn a great many facts about heart disease and prove them to the medical world without going beyond the patients that presented themselves in the course of his practice in Burnley. There is no good reason why others cannot do as much in connection with other diseases.

However, whether these problems are to be solved on an individualistic or on a cooperative basis, accurate and detailed records that will be intelligible to any physician must be made. Such records should include complete family histories, including parents, grandparents, and when possible great grandparents, aunts, uncles, cousins, brothers, sisters, and children. In addition to cause of death, such family history should include habitus, occupation, and anything else that is being considered with respect to the problem in question. It should include a most detailed medical life history, the results of physical examinations during health as well as during illness and a definite diagnosis of any and all illnesses.

Such records will, of course, be of no value to anyone if they are to be destroyed when the patient moves away, or dies, or when the physician making them dies. This is where the need of cooperative work enters the picture. There should be some clearing house to which all such records could be sent. A summary, even one on a printed form, might give all the information needed, if the problem were the relation of heredity, habitus, and previous illnesses, occupation or habits of eating and living to the etiology of cancer, but if the problem were the onset and early symptoms and physical findings in hypertensive cardio-vascular-renal disease, such a tabular record would hardly suffice.

A medical school might establish a department of clinical research and educate its alumni

to send to it all such information and so cooperate in solving any or all of these perplexing problems. A heavily endowed foundation might be able to get the practitioners to cooperate with it in a like manner. But would not an organization such as the Section on Medicine of the Illinois State Medical Society, an organization of practicing physicians, be the logical unit to carry out such cooperative research work? The Section on Medicine of this Society would not be able to undertake the solving of all of the problems in connection with the diseases mentioned at one time. They could, however, take them up at a time if similar organizations in other societies did not cooperate by taking up the other problems or other aspects of the same problem.

To undertake such work, the Section would have to have in addition to its present officers, a standing committee on clinical investigation of three to seven members, that would determine the exact problem to be undertaken, and the *modus operandi*. This committee would have to study all the records or questionnaires submitted, correlate and report the results. To succeed they would need the wholehearted cooperation of all of the physicians in the state who see patients with the disease being studied. To obtain this and promote the work it might be well for the small standing committee to have auxiliary members in each of the constituent county societies and in each of the branches of the Chicago Medical Society, who would serve as liaison officers and more particularly as promoters to keep the men in their district interested in the work.

Cooperative research by physicians through an agency controlled completely by physicians, should accomplish more for the advancement of medical knowledge, particularly with respect to the pathological conditions that seem to arise with advancing years, than any other type of investigative work.

In order to bring this matter up for formal discussion, I move that a committee of three plus the Chairman and Secretary, *ex-officio*, be appointed by the incoming chairman to consider the advisability of the Section on Medicine of the Illinois State Medical Society undertaking cooperative clinical investigation, the problem to be undertaken and the methods to be used, and that this committee be given power to

start putting their plan in operation if they deem it advisable.

952 North Michigan Avenue

DISCUSSION

Dr. R. O. Stites, Industry: I wish I was a Methodist so I could say amen to everything Dr. Davis has said.

I have enjoyed the section on Medicine this year very much because it has been the most conservative program that I have ever attended. I went to the section on Public Health and it was not quite so conservative. They made the statement down there that eighty-five per cent of the school children in Chicago were defective. I asked them what the defects were, how hurriedly they made the examination and what they were going to do about the most of them.

If it was like the statement of the U. S. Army about our soldiers, most of it was useless to enumerate. You know the statements that went over the country about how defective our soldiers were. I, being on the field, know that most of the defects of the soldiers as listed, could not be remedied anyway. All flat feet were defective. How are you going to correct that anyhow? If their teeth were out and they would not hold the gas mask, they were defective. How are you going to correct that when lower plates are always loose? I remember when I was the last inspector, in picking out the men before they went to the front for combatant troops, that the short noses and the flat noses were defective, if the nose could not hold a gas mask. How are you going to correct that? I remember many with long backs, weak small legs and ankles, who could not carry sixty pounds on a march. They were defective. What are you going to do about that? I remember one fellow was ready to go into the thick of it and he had an old electrical burn on his forehead, his gas mask would not fit properly. He was defective. What are you going to do about that?

That statement about the deplorable condition of Chicago children, is going to get wide circulation and it is going to do harm to Chicago and the Nation. I am ignorant how that terrible condition was arrived at, but according to that statement, those of us who have four children, three of them are defective and a portion of the fourth one also. If their defects can be remedied, by all means mention it, but if not, why mention it at all. I am sure that most of them are just some slight temporary affair and that the others are family or so-called stock characteristics, that cannot be remedied or corrected and would have no value to the child if they were.

Dr. L. D. Snorf, Chicago: I think that we as the younger group of physicians get the impression that the medicine we know is probably the last word. And it takes just such a recapitulation as Dr. Davis has made here this morning to give us

an appreciation of the really marvelous work that has been done over the past centuries.

Someone has said, "Of course, any man who begins reading and writing medical history is admitting his age." I do not know that that applies to Dr. Davis, but it seems to be rather generally accepted that men as they get older go into the discussion of medical history. The reason for it is that as we get along a little more in age and experience we do appreciate to a greater extent the classic work that has been done by such great men as Davis has mentioned.

His discussion of the historical events is more of a preamble to the statement that he later made in the form of a motion.

Mackenzie, of course, was an outstanding character of a man who did research in the home,—the man who did extensive research to the extent that he was able to write a book that has few equals. We are inclined to think too often of research as a thing coming out of a laboratory, say a man who has no clinical contact, but if we can make use of our experiences that we have in everyday practice, and those of you doing general practice, with such a tremendous fund of experience, if we will correlate that work, and as Dr. Davis suggested, put it down so that it will be at the disposal of others later on, it seems to me it would be a splendid thing. It is a splendid idea; something, at least, to try out.

Dr. N. S. Davis, III, Chicago: About the Chicago School survey Kegel spoke of. I have heard Kegel talk about that a lot. It is his favorite topic, and the defects are very much the same that were found in the army, the flat-foot, the postural defects, the tonsils, the crooked teeth, defective vision, defective hearing; some of these can be corrected. Some cannot be, and some of them are not of much significance.

But still it would be very interesting to be able to check some of these children up—ten, fifteen, twenty, thirty years from now, and see what relation the defects picked up during grammar school years may have on their life afterwards.

I have a younger brother who has not been well since early childhood, when he had had head colds, and some middle ear trouble, as I remember. Then he had a flu pneumonia during the War and since then has been in worse health, if anything, because of bronchiectasis. It has always been against my principles to take care of the family. He had seen various doctors in this country and Europe. They all thought there was bronchiectasis, but did not go into the cause particularly. He came out to Chicago a little while ago, feeling pretty well when he arrived, and then had a flare-up of his cold. From the looks of his throat, with the pus draining down either side, and a nice red streak down either side, I felt pretty sure there was something in one sinus or another. He had an x-ray and showed both maxillary sinuses completely cloudy and either the sphenoids or the ethmoids, I

have forgotten which, also cloudy. They did a radical maxillary on one side and found a marked polypoid degeneration. Of course, that has been the basis of his trouble ever since he was a youngster. He was getting some drainage, and was not getting pain in his face, and nobody paid any attention to it. However, I have no doubt that for the last twenty-five years at least he has been below normal purely on account of that sinusitis. We will find that some of these children's defects will have the same affect on their health, I am sure.

Another thing, you get some cases that will have perhaps some carious teeth, bad tonsils, and maybe a deflected septum and hypertrophied turbinates, and if you come right down to it, while there are enough defects to include eighty-five per cent of the children, a lot of them really may be co-related.

I am very glad that the section on Medicine has adopted this suggestion of mine to have a committee consider what, if anything, can be done along this line, because I am more and more impressed by the fact that we know so little about the clinical history of some of these diseases.

For example, recently I had a case of fever that, as a matter of fact, the cause was undetermined until the patient was pretty nearly well. It looked like a typhoid, but he had a persistent negative Widal, slow pulse. We tried at the hospital to get a Widal, but we could not get one; we got negatives.

I was looking around for a good description of undulant fever, which is, after all, a relatively new disease, and you cannot find a description of undulant fever in the literature that tells a typical case history, apparently. At least, I have not been able to find it.

There are many syndromes, relatively new, of which you cannot find descriptions that compare at all with the descriptions of disease that were made fifty, or a hundred and fifty or two hundred years ago, when they did not have anything except what the patient presented. If the section on Medicine is able to get descriptions of diseases comparable with those made by the old clinicians, it would do a great deal to advance medicine.

STATE HEALTH DIRECTOR REPORTS ON THE SERIOUS SMALLPOX SITUATION IN ILLINOIS

ANDY HALL, M. D.

SPRINGFIELD, ILL.

Illinois is now in the throes of one of its periodical and disgraceful experiences with smallpox. During 1929 no less than 4,251 cases of this filthy, loathsome disease were reported in the State. Prevalence in Illinois was greater by 1,100 cases than in any other state in the Union and greater by over 3,000 cases than the aggregate in France, Germany, Italy, Belgium, Neth-

erlands, Poland, Japan, Philippine Islands, Cuba, Switzerland, and Panama Canal Zone.

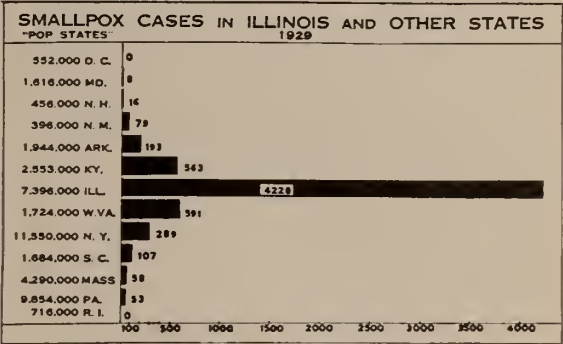
Health departments spent over \$100,000 in efforts at controlling smallpox in Illinois during 1929 while the 4,251 patients together with an attendant on each spent an aggregate of 490 years in quarantine and seventeen people died. Since the United States entered the World War the 43,579 cases of smallpox which have occurred in the State have cost Illinois money enough to have built an 18 foot hard road from Danville to Quincy. As it is the money is gone and all we have to show for it are thousands of disfigured faces, numerous graves, a depleted pocket-book and the memory of no little grief.

Neglecting vaccination during childhood merely amounts to postponing that procedure for most people plus the grief and expense of enduring and fighting epidemics of smallpox. Nearly everybody undergoes the experience of being vaccinated sooner or later because that is the only way known to control smallpox.

States that have and enforce compulsory vaccination laws are spared the periodic expense and trouble of combating smallpox epidemics. With three times the population, for example, New York and Pennsylvania had together less

state school children is vaccinated. In some schools one-third of the teachers are unvaccinated and not more than one per cent. of the pupils are protected against smallpox.

More students are in attendance on institutions of learning, other than public schools, in



Illinois than in any other state in the Union save New York. The State has six universities and 21 colleges which enjoy larger productive funds than those in any but three other states. Chicago is regarded as the medical center of this country and is by way of becoming the medical center of the world.

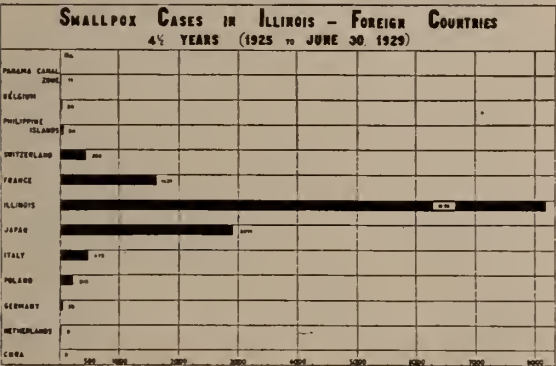
In spite of all this cultural and scientific attainment in learning Illinois has one of the worst and most disgraceful smallpox records in the world. Can it be that the taxpayers and the medical profession are satisfied with this record? Authority to do systematically and in good season what is now practiced sporadically and under pressure of emergencies is all that is necessary to eliminate smallpox as a problem in Illinois.

“THE A. B. C. OF THE
ELECTROCARDIOGRAM”*
EMMET KEATING, M. D.
CHICAGO.

We are all aware of the fact that one of the greatest problems in the treatment of heart disease is the ability to know when we are dealing with heart disease, or when we have a condition that simulates heart disease.

I know of no condition which has as much interest as the study and treatment of the heart, and one of the reasons that it has so great an interest is because it involves such a wide field.

*Read before Section on Medicine, Illinois State Medical Society, Peoria, May 21, 1929.



than 350 cases of smallpox during 1929 against 4,251 in Illinois. The eleven states which have compulsory vaccination laws had together less than 2,000 cases of smallpox during 1929, a figure not one-half the magnitude of that representing the prevalence in Illinois.

The remedy in Illinois is a law making vaccination against smallpox compulsory and prohibiting unvaccinated children from attending schools, public, private or parochial. Under existing laws, notwithstanding the vast amount of educational effort only 1 out of 10 down-

The man who successfully treats heart disease must know many things other than the classical symptoms, the classical findings, the anatomy, and the physiology of the heart. And that is the reason, to me at least, that the treatment of heart disease holds so great an interest for the man in general medicine.

The time has come when general medicine is the most important field in all practice. In the pre-bacteriological age it was all general medicine, and then, with the findings and the discoveries of the bacteriologists, the specialties developed very rapidly and threatened for a time to overwhelm and displace general medicine.

The pendulum is now swinging back and general medicine is again coming to the front. It is no longer a disgrace to be a family doctor, or a general practitioner, because the dignity of any profession is only as much as the learning and dignity of the man who practices it.

Our modern schools have been turning out men who are well equipped for diagnosis and who, if they will give it their attention, must command the highest regard of any of our men who devote all of their time to one of the special features of the practice of medicine.

I think the electrocardiograph must have had its inception in 1786 when the wife of Professor Luigi Galvani was preparing a dinner of frogs legs.

It seems that Professor Galvani had a small, old-fashioned friction machine on the kitchen table and this friction machine, through the intervention of a table knife, came in contact with the frogs legs. Mrs. Galvani was surprised to see the frogs, which were supposed to be dead, begin to live again. She called the attention of her husband to this phenomenon and he immediately became interested. He began to study the electrical reactions of muscles.

In 1856 the discovery was made that a muscle contracting, develops an electric current. Before that time, in 1840, Sir William Thomson, who was president of the first Atlantic Cable Company, developed and invented the reflecting galvanometer. You are all familiar with that. There are many types and many kinds, but it was found by the electrical engineers that the galvanometers in use were not of sufficient delicacy to pick up, register and record currents of small potentials. It was about 1904 or 1905, at

the annual meeting of the electrical engineers in New York City, that one of their number exhibited a galvanometer known as an oscillograph. The oscillograph depends for its action upon an electric magnet which is encased in a cylinder filled with oil. The needle of the oscillograph is not a needle, but a suspended phosphor bronze ribbon. At the lower end of this phosphor bronze ribbon there is attached a small mirror.

The mirror is not more than one or two millimeters in length. This mirror looks out of a window. When currents are introduced to come in contact with the oscillograph or galvanometer, this phosphor bronze ribbon, which carries the mirror fastened to the ribbon by a piece of iron, will turn, either to the right or the left, according to the polarity of the current.

That is the most sensitive galvanometer that the electrical engineers know, but it is not sensitive enough to pick up the currents of the human heart, or the currents developed by the contraction of the human heart.

Therefore, it remained to have something done to increase that current so that it would affect the oscillograph ribbon. That was done by introducing three radio tubes and these three radio tubes boost the heart current 3,000 times.

The electrocardiograph was developed in 1903 by Einthoven in Amsterdam. He was a physiologist and he had been working many, many years, as you know, trying to find something to record the various actions of the heart. The recording device consisted of a very fine spun glass string suspended between two electromagnets. It was a very complicated machine, a very delicate machine. It was five years before anybody had the foresight to see that this very delicate and wonderful machine had possibilities in clinical medicine, and that first man was Sir Thomas Lewis, an Englishman.

Sir Thomas Lewis took the electrocardiograph out of the physiologist's laboratory and started making experiments in the use of it in the clinical practice of medicine. And Sir Thomas Lewis was the pioneer in what is known about electrocardiography. Other men since that time have written many articles on it, and many books have been written. The chapter is by no means closed, and it will not fulfill its mission until more men in general practice take an interest and begin to compare the pictures as made

by the electrocardiograph with the clinical symptoms as they progress or recede in their patients.

We have said that very many things have contributed to the development of this instrument of precision. The string galvanometer depended upon making pictures of the string as it waved back and forth in response to the electrical currents. The string was very easily broken. It required a good deal of ingenuity to keep the machine going. So it remained for American genius to develop a machine that did not have all of those very fine parts, and American genius utilized the oscillograph by introducing the radio tubes, and now the electrocardiogram is inscribed by rays of light as the mirror reflects them on a moving picture film. (We will show them in a little while.)

One of the greatest values of a machine of this kind, or any instrument of this kind, is that it arouses our curiosity, and unless we have our curiosity aroused we will not take very much interest in anything.

If you have electrocardiograms made, if you will pay attention to them, if you will study them, and make yourself familiar with what will seem at first a lot of foolish and irregular lines, you will find that your curiosity will grow, that you will be making more careful examinations of your patients, that you will be hearing tones you never heard before, that you will be hearing murmurs that you never heard before, that you will be learning to place a value upon the myocardia as it is portrayed by the stethoscope that you have never done before.

You will find that you will be taking histories as you never have taken them before, and you will find that you will be making observations of your patients that you never made before. And if it is of no more value than that, that would be sufficient.

But I want to again repeat that it will not fulfill its mission until every doctor becomes more familiar with the reading of the electrographic records.

(Slides)

DISCUSSION

Dr. Walter G. Bain, Springfield: I rather enjoyed the doctor's effort to tell you so much about the electrocardiograph in so short a time. He tackled rather a large subject.

No doubt the proposition of most interest to you men is that of how you are going to be able to make this new and very valuable instrument available to yourselves.

Formerly the electrocardiograph was an instrument so complicated that even in the large institutions the large hospitals, it was almost prohibitive from the standpoint of expense and from the standpoint of the high degree of skill required in the operation of this instrument.

Any hospital can install this improved instrument. It is also a practical instrument for an internist with a large heart practice to include in his office. In the hands of a good technician, this instrument can be operated without the presence of the physician. If the physician has not acquired skill in interpreting the graph, he can send it to some known cardiologist and have it interpreted. This opens the way for you to begin the study of the use of this instrument in your own practice.

We have had a Victor electrocardiograph at St. John's Hospital at Springfield for two years, and in observing the numerous cases that have come up for examination it seems to me that the most valuable asset that we have in this instrument is that we are able to give much better prognoses of these heart cases. I do not believe there is any one factor that is so valuable in prognosing the future of these heart conditions as this modern electrocardiograph.

Dr. Charles R. Wiley, Chicago: In discussing this subject of electrocardiography I wish to say my own experience with it dates back to about the time this machine was first put on the market.

There is only this note of warning: The electrocardiograph will not make a diagnosis of a heart with a mitral insufficiency, other than a left heart preponderance. It will not show the condition of a heart in a mitral stenosis or a decompensation. It will not show the condition of the heart except in the arrhythmias and in myocarditis, and there it has real value. It is an instrument of small value in the ordinary lesions with which you come in contact in general practice.

It will do this for you: it will give you an indication of the condition of the heart from the standpoint of digitalization.

Dr. Emmet Keating, Chicago: I tried to point out that you have not successfully practiced medicine if your only dependence was the electrocardiogram. The picture must be coordinated and correlated with your history and your physical facts.

The best way to start to learn how to study an electrocardiographic record is to have one made of yourself. If you have a normal electrocardiogram for your age and will keep it and compare it with every electrocardiogram that is brought to your attention, you will have a starting point, and you will learn to decipher what these various things mean.

I am glad that Doctor Wiley spoke of digitalis, because if there is any road that will lead the doctor to

disaster it is the road of thinking of heart disease in terms of digitalis.

It is surprising how many heart conditions you can treat successfully if you will forget all about digitalis and it is surprising how relatively few heart conditions need digitalis, if you will do the other things to relieve the heart of its burdens.

RELIEF OF PROJECTILE VOMITING IN INFANTS BY RADIATION OF THE UPPER CHEST REGION*

ORVILLE BARBOUR, M. D., AND J. W. CONNELL, M. D., PEORIA

An infant with projectile vomiting presents a difficult problem of choice of therapy to the clinician. The question always is, whether surgery is or is not necessary. The usual procedure is to attempt to enable the baby to make a satisfactory gain in weight by the use of atropine and thick feeding, until after several weeks or months the vomiting finally ceases; or, if the vomiting continues unabated to have a Rammstedt operation performed. The etiology of this condition is undetermined, and the physiological processes involved are not definitely known.

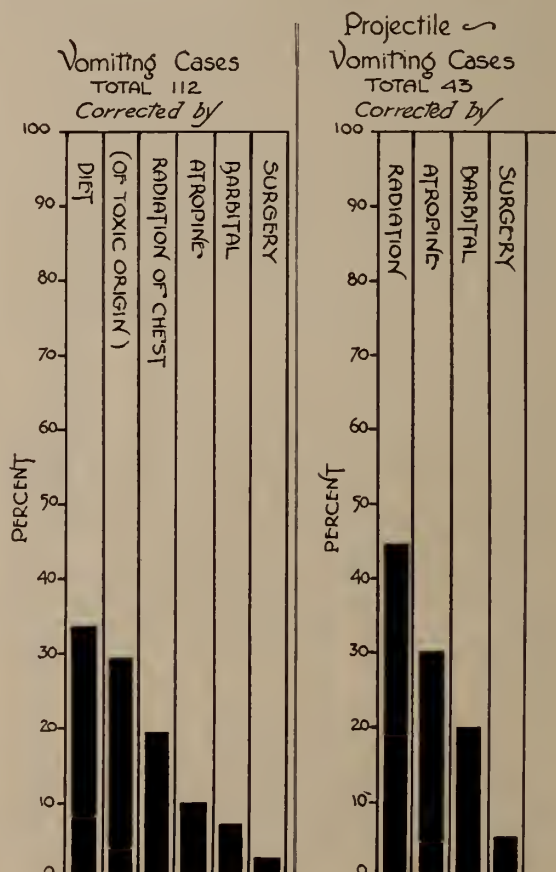
The cases operated on show a definite tumor of hypertrophied muscle. The incision of this tumor and probably of nerve endings brings relief of the vomiting. And yet, Tumpeer and Bernstein¹ have artificially produced this tumor in the pyloruses of adult dogs, without producing the clinical picture of pyloric stenosis. After one or two days these dogs did not vomit, nor was the emptying time of the stomachs conspicuously retarded. It would appear from their work that the vomiting is not due to the anatomic tumor alone. Contraction waves were observed passing over the surface of these artificial tumors as are seen over the clinical pyloric tumors. The significance of these waves is a matter of conjecture. Perhaps if these experiments were repeated on new-born puppies instead of on adult dogs the comparisons would be more analogous to clinical pyloric stenosis, which occurs only in new-born infants.

Atropine paralyzes the vagus endings with depression of all peristalsis of the stomach, as well as of the pylorus. In some cases, atropine brings a great deal of relief, in others, appar-

ently none. This may be due either to the degree of, or to the difference in etiology. The hyperirritability of the infant's entire nervous system may be a factor. This may explain the good results obtained by Sauer with phenol-barbital. These infants usually seem abnormally nervous, and sensitive to external stimuli.

During the last two years the writers have had certain experiences and empirical results, which we hope may throw some light on the factors involved in this condition. It is with this in mind that the material in this paper is presented.

During this two year period 112 cases of vomiting in infants under 4 months of age have been studied. Analysis of these cases reveals the following information. In 32 cases or in 29 per cent of the total, the vomiting was found to be of definite toxic or infectious origin. The vomiting was relieved in 37 cases or 33 per cent of the 112, by correcting the diet. Twelve cases or 10 per cent were controlled with atropine and thick feedings. Eight cases or 7 per cent were relieved by phenol-barbital. Radiation of



*Read before Section on Medicine, Illinois State Medical Society, May 23, 1929.

the upper chest region relieved 21 cases or 19 per cent of the total. In 2 cases or 2 per cent a Rammstedt operation was performed.²

In 69 of these 112 cases the vomiting was not essentially projectile. In 43 cases the vomiting was persistently true clinical projectile vomiting. Analyzing these 43 cases we find that 30 per cent of them were treated with atropine, 20 per cent with phenol-barbital, 45 per cent by radiation of the upper chest, and 5 per cent by surgery.³

In August, 1926, while determining the emptying time of the stomach of an infant with projectile vomiting, we noticed that the thymus shadow was much larger than normal. We decided to radiate the thymus area before giving an anesthetic for the Rammstedt operation. To our surprise the patient stopped vomiting 12 hours after the application of the roentgen rays. The results obtained in that and in 3 other cases were published in May, 1927.⁴ A year later Rubin⁵ reported finding enlarged thymus shadows in 13 consecutive cases of pylorospasm, and of relieving the condition in 5 cases by radiation of the thymus area. We wish to present in this paper our experiences and results in 17 additional cases.

REPORT OF CASES

Case 5. April 23, 1928. Dorothy B. A female infant aged 5 weeks, breast fed. Second child. She had been choking and vomiting for 3 days. Projectile vomiting occurred at irregular intervals between feedings. Administration of atropine before nursing for 48 hours had no effect on the vomiting. X-ray examination of the chest showed the supracardiac shadow to be wider than usual, on either side of the spine at the level of the second rib. Ninety mg. of radium was applied over the upper chest for 2 hours on each of 4 areas. The size of pack used was 1 inch by 1 inch. It was used at $2\frac{1}{2}$ cm. from the skin, with 1 m.m. lead filter, plus a lead jacket. With four 2 hour applications of the 90 mg. used, a total dosage of 720 mg. hours was given. This was the dosage and technique used in each case herein reported, unless otherwise specified. Nursings were preceded by gastric lavages, and a large amount of mucus was obtained each time. The patient's condition was improved 12 hours after the radium application. Five days later the vomiting had ceased. The lavages no longer contained any mucus, so they were discontinued. The subsequent history of this child is of peculiar interest. Two months later she developed pertussis. The paroxysms became quite severe, accompanied by marked dyspnea and cyanosis. These dysneic attacks became so severe that in a desperate effort to obtain

relief the radium application was repeated. A noticeable improvement was evident in the infant's condition the following day. Although a mild bronchial cough persisted for 2 weeks, no more paroxysms occurred after the fifth day following the radium application. Her progress since has been uneventful.

Case 6. May 21, 1928. Robert M. A male infant, aged 7 weeks. First child. He was weaned 2 weeks after birth because of his mother's abscessed breasts. He had then been fed various sweet milk formulae. He cried a great deal and forcefully vomited shortly after each feeding. He was quite constipated, and passed hard soap stools when given enemas. He was malnourished and had a distended abdomen. Whole lactic milk with lactose, preceded by atropine, was given every 4 hours. For 10 days he vomited very little, seemed more comfortable, and gained 8 ounces in weight. On the eighth day projectile vomiting occurred shortly after each of four consecutive feedings. Roentgen examination showed both lungs clear. There was a soft tissue shadow seen to the left of the spine at the level of the 1st to the 4th ribs. This was judged to be an enlarged thymus gland. That area was exposed to the roentgen rays as follows: An area over the manubrium of $1\frac{1}{2}$ inches by 2 inches was exposed. The face, neck, and the rest of the chest was shielded. The time of exposure was 5 minutes, the distance 12 inches, spark gap 6 to 7 inches, milliamperes 5. This was the dosage and technique used in each case in this series, unless otherwise specified. During the 2 following days the feedings were retained. On the third day, each feeding was soon forcefully expelled. The upper chest was then exposed to radium for 8 hours, as described in the previous case history. The patient's condition improved within 24 hours, and continued to do so without recurrence of the symptoms. Lavage of the stomach and rectum were continued for 10 days until all the mucus had disappeared. He has since continued to develop normally.

Case 7. May 31, 1928. John E. A male infant, aged 5 weeks. First child. He had been delivered by Cesarean section at full term. He had been artificially fed since birth on various cow's milk formulae. He passed a soft light yellow stool every 2 or 3 days. Beginning at 3 weeks of age projectile vomiting occurred shortly after each feeding. Mucus was present in the vomitus, but not in the stools. His weight at 5 weeks equalled his birth-weight. Atropine was given before each of the next 6 feedings without any noticeable effect. Roentgen examination of the chest showed that there was a definite shadow of an enlarged thymus in the supracardiac region. The lung fields otherwise looked normal. The child was given barium with his feeding and plated and fluoroscoped 10 minutes later. None of the barium had passed out of the stomach. The infant was re-rayed at the end of 4 hours. About 25 per cent. of the meal had passed through the pylorus. The bulk of the meal was still in the stomach. The upper chest was then exposed to the roentgen rays for 5 minutes, with the described technique. Whole lactic milk with corn syrup, preceded

by gastric lavage, was fed by gavage every 4 hours. The feedings were retained, and the infant gained in weight, but the mucus persisted in the lavages for the next 12 days. On the thirteenth day projectile vomiting recurred. Another x-ray examination showed a definite decrease in the size of the thymus shadow, and a 25 per cent. retention of a 4 hour barium meal. Because of the child's clinical condition radium was applied over the upper chest. Three days later all the feedings were being retained, no mucus was present in the lavages, the roentgen ray showed an apparently normal thymus shadow, and an almost complete emptying of the barium meal in 4 hours. Lavages and gavages were discontinued. The baby has continued to thrive without further trouble.

Case 8. June 7, 1928. Barbara H. A female infant, aged 7 weeks. Breast fed. Sixth child. She was delivered one month over term by transverse labor. She had trouble breathing after delivery, and couldn't use her left arm for nine days. She had been vomiting shortly after each nursing for 4 weeks. The vomiting was usually projectile. She had had 3 choking spells with cyanosis, in the last week. She was good during the night, but was very fussy during the day. She had 12 to 18 small yellow stools daily during her first 4 weeks of life. The stools then became larger and much less frequent. The abdomen was distended constantly and flatus was expelled frequently. She weighed 10 pounds, which was 2 pounds more than her birthweight. Roentgen examination showed an enlarged thymus shadow and a 50 per cent. retention of a 4 hour barium meal. The upper chest was then exposed to the roentgen rays for 5 minutes. A large amount of mucus was returned in the gastric lavages. All feedings were retained for 3 days. Projectile vomiting recurred on the fourth day. X-ray examination on that day showed the supracardiac shadow to represent about 50 per cent. of the chest in that area. There was a very small residue of barium in the stomach 4 hours after feeding. Radium was applied over the upper chest for 8 hours. She retained all of her feedings after 12 hours following the radium application. Five days later no more mucus was obtained in the lavages. She was discharged from the hospital, and has since continued to develop normally.

Case 9. Aug. 31, 1928. Robert S. A male infant, aged 3 weeks. First child. Breast fed one week. He was then fed S. M. A. Projectile vomiting had occurred shortly after nearly every feeding for 2 weeks. Atropine was prescribed to be given before each feeding. Twelve hours later he vomited after a feeding, and choked and became cyanotic. Roentgen examination showed the supracardiac shadow to be widened about one-eighth of an inch on either side of the spine at the level of the second dorsal vertebra. Five minutes of x-rays were applied to that region. Large amounts of mucus were lavaged from the stomach before each feeding. All feedings were retained for 2 days. On the third day projectile vomiting recurred. Radium was then applied over the upper chest. The vomiting stopped within 24 hours. Nine days later the

mucus had disappeared from the gastric lavages, and there has been no recurrence of the vomiting.

Case 10. September 6, 1928. Elton R. A male infant, aged 10 weeks. First child. He had been fed breast milk 2 weeks, then whole lactic milk 2 weeks, then S.M.A. for 6 weeks. When 10 weeks of age he began having projectile vomiting shortly after each feeding. Roentgen examination showed the thymus shadow to be widened to about one-half the distance of the upper chest. That area was exposed to the roentgen rays for about 5 minutes. The baby continued to vomit after each feeding. Large amounts of mucus were obtained in each gastric lavage. The upper chest was then exposed to radium. Four days later he was discharged from the hospital with no more vomiting and no more mucus in the lavages.

Case 11. September 14, 1928. Janette B. A female infant, aged 2 days. Second child. Breast fed. The first child was case 3 in this series. When this baby was 24 hours old she began vomiting shortly after each feeding. The vomiting was projectile. Atropine, lavage of mucus, and feeding by gavage for 2 days had no effect on the vomiting. Roentgen examination showed an enlarged thymus shadow. That area was then exposed to the roentgen rays for 5 minutes. No more vomiting occurred. Gastric lavage was continued for 15 days, because of the persistence of mucus. She was then discharged from the hospital and continued to thrive on her mother's milk.

Case 12. September 14, 1928. Fred H. A male infant, aged 2 days. Second child. Breast fed. For 24 hours projectile vomiting had occurred shortly after each feeding. Mucus was present in the vomitus and in the stools. Atropine, lavage of mucus, and gavage of feedings for 2 days had no effect on the vomiting. Roentgen examination showed an enlarged thymus shadow. The usual x-ray dosage was applied to the upper chest. The following day he nursed his mother's breasts without vomiting. The mucus disappeared in 11 days. The lavages were then discontinued. There has been no recurrence of the vomiting.

Case 13. October 15, 1928. Joan B. A female infant, aged 3 months. Second child. Artificially fed since birth. She had been vomiting and choking with some cyanosis after each feeding for 4 days. Asthmatic rales were heard over both lungs. Roentgen examination showed an enlarged thymus shadow. The upper chest was then exposed to the roentgen rays for 5 minutes. Her condition was no better 24 hours later, so radium was applied to the upper chest. The vomiting stopped 12 hours after the removal of the radium. Her condition continued to improve until 5 days later she seemed all right except for the mucus returned in the gastric lavages. The lavages were discontinued and she was discharged from the hospital. Four days later projectile vomiting recurred. Large quantities of mucus were present in the vomitus, and passed in the stools. The mucus was lavaged from the stomach and rectum the following 4 days. No mucus was obtained on the fifth day, so the lavages were dis-

continued. The child's development has since been uneventful.

Case 14, October 15, 1928. Donna S. A female infant, aged 5 weeks. First child. Artificially fed since birth. At 3 weeks of age she began to cry a great deal. She vomited forcefully shortly after each feeding. Large amounts of mucus were seen in her vomitus and in her stools. Atropine seemed to bring prompt relief. She gained normally for 5 weeks. At that time the vomiting and crying recurred with the onset of an upper respiratory infection. The infection had subsided 5 days later, but the vomiting and crying continued. Atropine had no effect. Roentgen examination showed a shadow slightly to the right and to the left of the spine in the supracardiac region. The width of the chest shadow at that region was 8.7 cm. The width of the gland shadow was 3 cm. Because of the clinical condition, the upper chest was exposed to the roentgen rays. The vomiting stopped within 8 hours. Gastric lavages were continued until no more mucus was returned, which was 7 days later. The vomiting did not recur.

Case 15. November 28, 1928. Gilbert G. A male infant, aged 11 weeks. First child. This case was a most unusual one. He progressed normally for 3 weeks. Then he cried most of the time for 24 hours. The second day he became cyanotic and remained so for 3 days. His condition then apparently returned to normal. However, he was weaned from the breast and placed on artificial feedings. Two weeks later he again had a severe crying spell and then became cyanotic. He remained cyanotic for one week. He then seemed normal for two weeks, when the cyanosis returned for another week. During these periods of cyanosis he vomited apparently all of each feeding, either immediately or an hour after. The vomiting was usually projectile. The parents did not notice any dyspnea. After a week of seeming quite well, when 11 weeks of age he became quite cyanotic, and vomited each of his feedings. Examination revealed a well-nourished male infant, with a marked general cyanosis. He was quite apathetic. The heart sounds were normal. The blood cells were normal except for a secondary anemia. The rectal temperature was 95 deg. F. Roentgen examination showed a markedly enlarged thymus shadow. The width of the chest shadow in the supracardiac region was 8.7 cm., the width of the gland shadow was 3.7 cm., or nearly half of the width of the chest. The roentgen rays were applied to an area 2 inches square over the sternum. For two days he had the appearance of a normal infant. On the third day the vomiting recurred but the cyanosis did not. Radium was applied over the upper chest. One week later roentgen examination showed the thymus shadow width to have decreased from 3.7 cm. to 3.1 cm. Large amounts of mucus persisted in the gastric lavages and in the stools for 21 days. The patient was then discharged from the hospital. He has since progressed normally.

Case 16. December 11, 1928. Billy B. A male infant, aged 3 weeks. Fifth child. He had been vomit-

ing shortly after each feeding for 6 days. He was given atropine, and whole lactic feedings by gavage. Gastric lavages contained large amounts of mucus. There was no appreciable lessening of the vomiting in 24 hours. Roentgen examination of the chest showed no roentgen evidence of an enlarged thymus. However, because of the symptoms the upper chest was exposed to the roentgen rays. Two days later the vomiting was just as severe. The x-ray demonstrated a 90 per cent. retention of a barium meal after 4 hours. The patient was losing weight and becoming dehydrated, so 250 cc. of Ringer's solution was administered intraperitoneally on each of the 2 following days. The next day, December 17, 1928, Dr. George Weber performed a Rammstedt operation. A pyloric tumor about the size of a hickory nut was incised. The baby recovered satisfactorily from the operation, retained his feedings, and gained steadily in weight, except during a week of bronchitis, which occurred 2 weeks after the operation. The gastric lavages were continued for 5 weeks, however, because of the persistence of mucus. The subsequent history of this patient is of special interest. His progress was uneventful until March 12, 1929. On that day, nearly 3 months after the operation, projectile vomiting recurred. Large amounts of mucus were lavaged from the stomach. Radium was then applied over the upper chest for 8 hours. No more vomiting occurred after 8 hours following the exposure to the radium. No mucus was returned in the lavages 3 days later. He has had no further trouble.

Case 17. December 20, 1928. Orville T. A male infant, aged 5 weeks. Third child. The family history here is of interest. The first baby was found dead in bed. The second child during infancy had a chronic cough which was relieved by radiation of the upper chest region. This infant began projectile vomiting at 4 weeks of age. The vomiting continued for one week without cessation. Atropine was administered for two days, but gave no relief. Gastric lavages contained mucus. Roentgen examination showed the supracardiac shadow to extend about one-sixteenth of an inch on either side of the spine at the level of the second rib. Because of the clinical picture, and the family history, the upper chest was exposed to the roentgen rays, even though the thymus shadow was not appreciably enlarged. The vomiting stopped temporarily, then recurred 2 days later. Eighty mg. of radium was then applied over the thymus area. Seven days later all feedings had been retained for 6 days, and no mucus was returned in the lavages. Thirty days later projectile vomiting recurred. He vomited shortly after each feeding. His abdomen became quite distended. The thymus shadow appeared normal in size. However, because of the persistence of the symptoms the radium dosage was repeated. He continued to vomit one or two of his feedings daily. The abdomen remained distended. Mucus continued in large amounts in the gastric and rectal lavages. Atropine was continued, whole lactic milk was fed by gavage. The patient's condition would not improve. His weight did

not increase. One month later his weight was the same as on the day of admittance. On suspicion, 50 mg. of neoarsphenamine was administered intraperitoneally according to Grulee's⁶ method. Within 48 hours his condition began to improve. His weight gained steadily. The neoarsphenamine was repeated at weekly intervals until 8 injections had been given. The infant gained 24 ounces in weight the first 2 weeks. He stopped vomiting, his bowels functioned normally, the abdominal distension disappeared, no more flatus was expelled, and no mucus was returned in the lavages. His progress since has been uneventful.

Case 18. January 24, 1929. Richard M. A male infant, aged 2 days. Fourth child. The family history is also of interest in this case. The preceding child had projectile vomiting of his feedings for 15 months. Sufficient food was retained by the use of atropine and thick feedings to permit a nearly normal growth. Another item of interest is that case No. 6 in this series is a paternal cousin of this patient. This infant's condition seemed normal for 24 hours. The second day water and feedings were promptly vomited. Atropine and whole lactic milk was given for 4 days without any effect on the vomiting. Gastric lavages obtained large amounts of mucus. Roentgen examination of the chest showed no roentgen evidence of an enlarged thymus. Because of the symptoms the upper chest was exposed to the roentgen rays. No more vomiting occurred after 8 hours following the exposure to the x-rays. No mucus was returned in the gastric lavages 6 days later. The patient has continued to develop normally.

Case 19. February 2, 1929. Jacqueline M. A female infant, age 15 weeks. Artificially fed. Second child. Her development had been normal until two days ago. On that day, while feeding she began to cry and choke. She became quite cyanotic for a few moments. A few moments later she vomited quite forcefully. She continued to cry most of the time. Projectile vomiting occurred shortly after each feeding. Atropine and adjusting the food had no effect. Two days later roentgen examination showed an enlarged thymus shadow. The upper chest was then exposed to the roentgen rays. Eight hours later her feeding was retained. She stopped crying and slept apparently in comfort. Gastric lavages were continued for 3 days. No more mucus was obtained, so the patient was discharged from the hospital. She has continued to thrive without recurrence of the symptoms.

Case 20. February 7, 1929. Mary D. A female infant, aged 4 months. First child. Artificially fed. After gaining normally for 4 months, she developed bilateral cervical adenitis. Four days later she choked during feedings. Projectile vomiting occurred shortly after each feeding. This continued for 3 days. At that time her temperature was 101 deg. F. A urinalysis demonstrated a moderate pyelitis. Large amounts of mucus were obtained in the gastric lavages. Roentgen examination showed a widened supracardiac shadow above the shadow of the heart indicative of

an enlarged thymus gland. The usual exposure of roentgen rays was given to the upper chest. The vomiting stopped 8 hours later. The lavages were continued for 18 days, until no mucus was found. The infant's condition steadily improved and she gained steadily in weight after vomiting had ceased. Four weeks after admittance she was discharged from the hospital apparently in good condition. This case was not a true case of pylorospasm, but is included in this series because of the response of the projectile vomiting to radiation of the upper chest, in an infant with a definite toxemia. The fact that the cervical lymph glands were involved is of interest. Whether it is of any significance is a matter of conjecture.

Case 21. March 6, 1929. Ralph A. A male infant, aged 6 weeks. Breast fed. First child. At two weeks of age he began coughing at irregular intervals daily. At three weeks he began vomiting immediately or two or three hours after 3 or 4 feedings daily. He had been nursed regularly, and gained normally in weight. He was obstinately constipated. He was a well-nourished infant, with a normal temperature. His abdomen was quite distended. Atropine was administered before nursings for two days, with no effect on the vomiting. Roentgen examination of the chest showed a shadow at the level of the second interspace extending to the right and to the left of the spine indicative of an enlarged thymus. The usual x-ray exposure was given. In 24 hours the patient's condition had markedly improved. Large amounts of mucus were lavaged from the stomach before nursings. Four days later the projectile vomiting recurred. Radium was then applied over the upper chest. He has vomited no more. However, the mucus persisted in the gastric lavages and in the stools. The abdominal distension also persisted. Ten days later, because of a failing supply of breast milk, the baby was given complementary feedings of a cow's milk formula. Within a few hours he seemed more comfortable. He was then given artificial feedings alone for two days, then breast feedings only for two days, then breast and complementary feedings for two days. He was uncomfortable on complementary feedings, distinctly more uncomfortable on breast feedings, but seemed quite contented on artificial feedings. Accordingly he was weaned from the breast and placed on diluted cow's milk. The abdominal distension disappeared within 24 hours. In three days no more mucus was returned in the gastric and rectal lavages. The lavages were discontinued. The patient's progress has since been uneventful.

Discussion: These results require further investigation to determine how they were obtained physiologically. Investigations should be made as to the etiology of the symptoms, and as to how radiation of the chest relieved these symptoms.

Our first thought was that the thymus was the etiological factor. In those cases with en-

larged thymus shadows pressure of the gland on the vagi might possibly have had an irritating effect on the pylorus, but that would not account for the paralytic ileus and resulting abdominal distension that occurred in some of these cases. This distension might be explained, however, by a disturbed blood chemistry that occurs with an obstruction of the gastro-intestinal tract.

No blood chemistry analyses were obtained in our cases, so we have no information on that question. Thymus pressure on the vagi could hardly account for the recurrence of the vomiting after the thymus shadow and shrunk to apparently normal size following its exposure to the roentgen rays. Nor would it account for the subsequent permanent cessation of the vomiting following the application of radium over the same region. In all cases but two the thymus shadow was apparently enlarged laterally. We did not take any anteroposterior views, because we have found them of no value to us in cases of so-called thymic dyspnea. Furthermore, it has been our experience that the size of the thymus shadow has no bearing on the severity of the symptoms.

No one has ever found any conclusive evidence that the thymus produces an internal secretion, so for the present at least, such a possibility need not be considered. Whether the excess of nuclein and phosphorus found in thymic tissue has any bearing on the clinical picture remains to be seen.

General or local lymphatic hyperplasia with resulting toxic irritation may be a factor. It is well known how sensitive lymph tissue is to radiation. It may be possible that the lymph tissue destruction in the area exposed be sufficient to reduce the etiological irritation. Perhaps the lymph gland at the pylorus produces a direct irritation.

Whether or not the hyperirritability of the young infant's central nervous system is a factor in this condition is debatable.

In two of our cases protein sensitization seemed to be involved. They remained uncomfortable until cow's milk was substituted for mother's milk, as their food.

It seems to us that toxic irritation enters into the production of the vomiting. Whether the source of this toxicity is lymphatic hyperplasia or not, remains to be determined. Most of these

cases had a very slight daily rise in temperature. The one constant finding in every one of our cases, in addition to the vomiting was mucus in the gastric secretions. It was also usually found in the stools. In two cases in which the gastric lavages were discontinued before the mucus disappeared the vomiting recurred within a few days. When the lavages were continued as long as mucus was returned, the vomiting did not recur. It is well known that an evident toxicity in older children, as well as in infants, will produce vomiting, gastric anacidity, and mucus. If the stomach of older children are thus affected by an evident toxicity, perhaps new-born infants who are very sensitive to all stimuli, may react in this manner to a slight toxic irritation. No gastric analyses were made in these cases so we do not know whether or not the acidity was affected. The symptoms of pylorospasm practically always appear under two months of age, while the infant's nervous system is hyperirritable and all of its body cells and organs are extremely sensitive. Six cases cried or moaned a great deal as if in pain. Seven cases gave a history of cyanosis. In each of these cases, the thymus shadow was considered distinctly larger than normal. Whether this was due to the pressure of the enlarged gland on the blood vessels or not, we do not know.

How did radiation of the upper chest region produce the results herein reported? Was it due to the effect of the rays on the thymus? Reduction of the size of the gland alone would hardly explain it. Was it due to the effect of the rays on the vagi? We hardly think so. Nerve fibres are notably resistant to the roentgen ray.

If the etiology of the projectile vomiting is toxic irritation from lymphatic hyperplasia, the destruction of the abundant glandular tissue in the chest by radiation, must be sufficient to remove that irritation. The temporary exaggeration of the symptoms that occurs during and following radiation might be explained as a toxic reaction due to the absorption of the destroyed lymph tissue. The patients vomit any food given to them for 8 hours following the exposure to the rays. Also, their temperature will rise a little for 24 to 48 hours, and the quantity of mucus definitely increased for one to three days.

Then follows a temporary or permanent relief of the clinical picture.

This same toxic reaction may result from a foreign protein effect, due to the absorption of any destroyed or irritated tissue within the range of the rays. None of these infants received a skin-burn from the dosages used, but perhaps the sensitive individual cells of the new-born are extremely susceptible to the rays. This hypothesis may be determined by raying other parts of the body, or by injecting a foreign protein hypodermatically and observing the results.

Ivy⁷ exposed the thorax of dogs to roentgen rays sufficient to cause a first degree burn, without any effect on the gastric secretions. A human erythema dose of roentgen rays of short wave length delivered over the lower abdomen caused a hypernormal secretion of gastric juice lasting 1 or 2 days, followed by anorexia, hypnormal secretion and sometimes diarrhea, followed by normal gastric secretion and appetite on the fifth day. Similar results are reported by others.⁸⁻⁹⁻¹⁰

It is well known that the abdomen is extremely sensitive to roentgen rays, so similar results would perhaps be obtained on the human stomach. What effect roentgen ray exposure to the abdomen would have on clinical projectile vomiting is unknown. Why these observers obtained no results on the dog's stomach by radiation of the thorax, when we did on infants, needs explaining. Perhaps the fact that they used adult dogs, and our patients were new-born infants is a factor. It would be interesting to observe the results on new-born puppies. Our results were obtained in cases of clinical projectile vomiting. It may be that radiation of the chests of normal infants would have no effect on the gastric secretion.

Certainly these infants do not function normally physiologically while they are vomiting. Whether their general health is impaired, or their resistance is below normal we do not know. Four of our total of 21 cases later died, 17 are now living and healthy. Of those who died, case 3, previously reported, stopped vomiting but continued to lose in weight and died a week later. Cases 9 and 10 both died about a month following the radiation, of acute infectious colitis, which was prevalent in our community at that time. Case 14 died six weeks following radiation of acute mastoiditis.

The technique used in raying these cases is the same as we use on cases of thymic dyspnea. We have chosen to use the roentgen rays at first for two reasons: first, because occasionally one exposure of roentgen rays will permanently relieve the symptoms; second, because we feel that the use of radium as an initial treatment is dangerous. The toxic reaction to radium in the infants is greater than it is to the roentgen rays. Therefore, we feel it a safer plan to use the roentgen rays first, and then radium should more radiation be required. Although Hammar, who has studied the thymus for 20 years, states that raying that region does no harm to the chest, we feel that over-exposure is dangerous to the infant's general condition, and that it should be avoided.

In cases of projectile vomiting which do not respond to atropine, we have found exposing the upper chest to the roentgen rays of diagnostic, as well as of therapeutic value. One case reported in this series, and one case not reported were rayed without effecting the vomiting. Each of these cases was operated on, and a pyloric tumor found.

SUMMARY

1. Projectile vomiting was relieved in 17 infants herein reported and in 4 infants previously reported, by radiation of the upper chest region.
2. Of the 21 cases
 - a. 5 were relieved permanently by one exposure to the roentgen rays.
 - b. 3 were relieved permanently by one exposure to radium.
 - c. 12 were relieved temporarily by exposure to the roentgen rays, and then permanently by exposure to radium.
 - d. 1 case was exposed to the roentgen rays without relief, later was relieved temporarily by a Rammstedt operation, and 3 months later permanently relieved of vomiting by exposure to radium.
3. Thirteen were males, eight were females.
4. Ten were first-born.
5. Six cases were breast fed and 15 were artificially fed.
6. Four contained cases of projectile vomiting in their family history.

We wish to thank Dr. A. J. Carlson, Dr. Arnold Luckhart, and Dr. A. C. Ivy of Chicago,

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DR. ORVILLE BARBOUR,

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DISCUSSION

Dr. King G. Woodward, Rockford: I have been very much interested in Dr. Barbour's work, especially his work with the use of radium. I have had no occasion to use radium but I have used the x-ray rather extensively in these cases of thymic enlargement.

To me the question of the thymus is still open for a great deal of discussion, and as Dr. Barbour has cited, we do not know why the use of the roentgen ray gives us the results that it does in the cases of projectile vomiting.

I had a rather extensive case of both thymic enlargement and projectile vomiting several weeks ago. I was called to see the youngster when three days old because of the inability to keep any food or liquid down. The child at that time was considerably dehydrated. We administered fluids intraperitoneally and subcutaneously, and gave it a thick cereal feeding. We radiated the chest which showed a very slight lateral thymic enlargement, but the density of the thymus shadow was considerably increased.

Fluoroscopic examination with barium and subsequent x-ray pictures showed there was a two-hour retention of the barium. The child's condition was such that it was not deemed advisable to go ahead with surgical intervention, and for the next several days I used fluids intraperitoneally and thick cereal feeding with a cessation of vomiting.

The condition of the child did not improve as much as I thought it should and I was about ready to turn it over for surgical intervention. Before doing so we decided to have an x-ray treatment for the supposed slight thymic enlargement. In twelve hours after treatment the child had a temperature of 107 and the following morning the vomiting ceased and there has been no return since. An x-ray picture was taken three days ago and although the child appeared in per-

fect condition, it still shows an enlargement of the thymus.

What we have done I do not know. I do feel in regard to thymic enlargements that a child with a large thymus gland and with symptoms should be given x-ray treatments.

It has been our practice to give a series of three treatments and then if there is considerable improvement at the end of three months take another x-ray picture to determine whether or not there had been any shrinkage of the thymus gland. If there has not been a diminution in the size of the gland, but the symptoms have subsided, we let the thymus alone.

Dr. Henry J. Jurgens, Quincy: The thymus question is still pretty much up in the air. We have been in the habit of accusing the thymus of a great many things for which it is not responsible. Certainly the reports of the radiologists on the size of the thymus we must accept with a grain of salt. They are in the habit usually of taking the anteroposterior pictures which do not give any idea of the thickness of the gland itself.

As to the question of the vagus being disturbed by pressure of the thymus tissue that seems pretty far fetched, because in the first place the vagus is pretty well protected by the vessels and sheath in which it lies. And secondly, the nerve tissue is much more resistant than the soft glandular tissue.

I fully agree with the last speaker that there are a great many doctors giving an anesthetic who undoubtedly would have said the patient presented pathologically and anatomically the conditions which we usually have attributed to the status lymphaticus. It would be interesting if these gentlemen would tell us when they report these cases, if any observations have been made on these children that develop pyloric stenosis, at the time of their birth. There is undoubtedly a large question involved in this pyloric stenosis and the thyroid, rather than the thymus question, looms up.

Those of us who have had the good, or bad, fortune of operating on these cases and who have actually felt the pylorus in those cases know that it is not a clamor, we know it is absolute thickness and absolute hardness of the tissues. When you cut into it, it cuts like cartilage almost. The question is, why should this occur?

It would be interesting to know, for instance, the weight of these babies at birth. It would be interesting to know whether the different ossific nuclei which should be present at birth are present or whether they are abnormal and whether there is abnormal advancement of the ossification of particularly the bones of the feet and hands.

It would be still more interesting a year from now to get a report on these cases to find out whether there were other endocrine deficiencies, such as the development of the teeth and the brain.

If we get into this question pretty deeply we find that a great many of these babies have something wrong with their connective tissue. We find the con-

nective tissue in the pyloric wall, and in the bones abnormal; some disturbance in a great many or all of these cases—especially in the connective tissue forming the teeth and the neuroglia in the brain, as evidence by late teething, speech and cretinism. Of course, the neuroglia is not connective tissue, but it performs all the functions of this tissue by supporting the neurones and tracts.

Lately I have been in the habit of having all babies who at birth are over eight pounds x-rayed, to notice the condition and to give us a clew as to what to do. Engelbach has pointed out some years ago that very early and persistent thyroid therapy in these cases is indicated.

It is certainly very interesting to hear that some of these babies have improved by radiation, and it is one more thing to get away from surgery. Surgery is an abominable thing in these little babies, but still it saves lives.

Dr. John Vonachen, Peoria: I want to commend these two doctors. I think the practitioners will be benefited by a work like this, which should be carried on.

Frankly, I have never been a thymus enthusiast, and I have not had occasion to resort to radiation for projectile vomiting. We find that most of the cases that do not respond to atropine or phenol barbital before feedings, and those cases definitely losing ground are in the majority of cases true cases of pyloric stenosis.

I heard a very interesting discussion at the Detroit session of the American College of Physicians in which a pediatrician in Detroit made the statement that he was not seeing these cases. I think I will have to bear him out in this and in talking the matter over with different men in different communities I find some men see these cases and some do not. I think the only answer is that either some are poor diagnosticians, or else others are particularly looking for thymuses.

John Lovett Morse, in the *Boston Medical and Surgical Journal* of February, 1928, wrote a very trustworthy paper entitled, "The Obsession of the Thymus."

He brings out the points particularly that we are misled by x-ray pictures of the thymus gland. This is no reflection on the roentgenologist. I think the reason for the difficulty is that it is impossible to obtain uniform pictures in infants unless you catch them in expiration, unless the pictures are taken at the same distance, and also depending a great deal upon the shifting of the position of the infant.

I trust that work such as this will be further carried on, and I am not taking issue with Dr. Barbour or Dr. Connell, but simply commenting with reference to the general wave that is sweeping the country—the fanaticism concerning the thymus gland.

Dr. Abt in commenting on Dr. Morse's paper states that he thinks most conditions which are considered due to the thymus can really be traced to other causes, and that in view of the fact that we have not any

definite knowledge of the real function of the thymus gland, we should be very lenient in trying to attribute everything to this gland.

Dr. L. D. Snorf, Chicago: I happen not to be a pediatrician, but I am sufficiently interested in the gastric physiology to feel justified in asking just these few questions:

Was the emptying time determined on these cases, and how?

Were peristaltic waves noted in all these youngsters?

In these twenty-one cases was true pyloric stenosis decided upon, or were there cases of pylorospasm? Is it presumptuous to ask if there can be a distinct differentiation made? I happen not to know.

It seems to me that a further work that was suggested by Dr. Barbour on the physiologic processes of the stomach, determination of the gastric juice before and after radiation, would be of interest.

Dr. Lee Frech, Decatur: I have found in our practice that we have three different types of cases with which we deal in relation to this subject.

The first type being where we have the enlarged thymus and accidentally in our x-ray pictures we run on to a lot of enlarged thymus glands which clinically give absolutely no symptoms. In those cases we pay no attention to the thymus gland whatever because we do find so many of them without any symptoms that would be attributed to the thymus.

We run across other cases where we do not have, apparently, any symptoms from a thymus at all, and still we have our projectile vomiting, or our pylorospasm or our stenosis.

That, in a way, would make us believe that the thymus had at least clinically no connection with a stenosis or a pylorospasm, because it seems reasonable that if an enlarged thymus, without a gastric involvement would give thymic symptoms, with the gastric involvement we should still get our thymic symptoms.

That would lead me to conclude that as far as the enlarged thymus itself is concerned, there would be no connection between the two.

Then we see the case of enlarged thymus where we do get our clinical symptoms, and gastro-intestinal involvement (this is the third case).

Personally I never take any pictures of the chest for thymus unless I get clinical symptoms of thymus. On the other hand, we do run across a lot of enlarged thymus glands accidentally in our chest pictures which we leave alone and they never give us any trouble.

I believe that an enlarged thymus alone very rarely gives any trouble. It is my belief that there is something else connected with the enlarged thymus that cause symptoms or so-called status lymphaticus.

In those cases where you get your duskiess, and your dyspneic breathing very often the shadow of the thymus gland is disappointing, because in some of your most extreme cases, from symptomatic standpoints you get your smallest thymus glands, when you really expect a very definite enlargement.

On the other hand, in some of your accidental pic-

tures you get extremely enlarged thymus glands and still you get no symptoms from those glands.

There is another class of cases that we have run across, one just two days before coming to Peoria, in which we had a youngster who gave classical symptoms of thymus, duskiness, dyspneic breathing, and so forth. But this youngster was not brought in for that. The parents stated that the youngster incidentally had a cold. The youngster was brought in for projectile vomiting and the projectile vomiting was very definite, water not even being retained.

Here is another case where you have symptoms of thymus with projectile vomiting. The x-ray showed a very definitely enlarged thymus in that case. The youngster was given one treatment. We have not had time yet to find out what result that is going to have upon the vomiting. But I believe that enlarged thymus alone is not responsible for these things. I believe there is something else there other than just the simple enlargement.

I hope that Dr. Barbour's therapy will give us some relief. I am not denying, however, that the x-ray in these cases will do any good. That would be too far-fetched, but it is my hope that it will. I hope he goes ahead with it and works it out further and we would like to hear from him next year again.

Dr. S. H. Easton, Peoria: Speaking neither as a pediatrician or roentgenologist, or anything but an interested observer, it has been my privilege to see a lot of Dr. Barbour's cases at the hospital, and I can vouch for the accuracy of his clinical reports. I think when the paper appears it will be of interest to read carefully his clinical histories.

Dr. Barbour has not accused the thymus of being the cause of this trouble, as I recall in the paper. It is presented as a series of empirical observations in which radiation of the upper gastric region produces certain results. That may be due to thymus and it may be a vast number of things; however, the fact remains that in fifty-five per cent. of the cases he has relieved the projectile vomiting by a certain therapy, and in the other forty-five per cent. previous to resorting to surgery has tried x-ray and radium with a considerable degree of success.

I should like someone, if they have experience, to tell what porportion of their cases of projectile vomiting have gone on to operation, because the doctor has had only two out of one hundred and seventeen.

If those who are not trying radiation are showing a higher percentage of cases which prove surgical, we would have to take this paper pretty seriously. I think it presents a very interesting light on physiology and that is one of the chief reasons I have enjoyed following the work.

Dr. Gerald Cline, Bloomington: I have been quite interested in this paper. Dr. Easton brought up a point upon which I can give my personal experience—two operative cases out of about eighty-five.

I have not used x-ray on any of them just merely atropine and medicinal treatment. I do think, however, that I have been quite enthusiastic over the

thymus and I will say that now I am rather going down the other side of the line. I had a case a short time ago—it happened to be one of twins with typical thymus symptoms, a child about nine months old. We x-rayed it and found an enlarged thymus. Treated with two treatments the child was better. We asked the mother to bring in the other twin. So far as we can tell both children showed about the same size thymus shadow.

One has symptoms and other does not.

That brings up another point as to what the relation is with the twins?

Two years ago I made a study of ear conditions in infants, and I remember at that time I reported three or four cases of projectile vomiting which I thought had a pylorospasm. I could not see any peristaltic waves, but the symptoms were that of pylorospasm. However, I found an acute otitis and on opening the ears the projectile vomiting disappeared.

Was that a toxic process?

One other case of a thymus that was very interesting came to me about six weeks ago. It was a twenty-two day old child, had a perfectly normal history up to that time, when all at once it started crying, would not take its food; did not have projectile vomiting, but it had a dyspnea and a pallor and had a low degree of temperature. It had a coryza and a suspicious history of a thymic cry. The x-ray picture showed us what we thought was an enlarged thymus gland. We x-rayed the youngster three times and it began to get better. It started to nurse, and we were very well satisfied with the results. Still it had a temperature and a coryza.

At that time the child did not have a bulging fontanel. We sent them home and a week later they came back. The child had four convulsions in my office that afternoon. It happened another visiting pediatrician was with me that evening and he saw the case. At that time we found there was at least a certain amount of meningeal irritation and we thought we would try a spinal puncture, which we did. We found the fluid under pressure. This child had three spinal punctures. Immediately after the first we relieved its spasms and it never had another. After three weeks the child was apparently improving as it should. I took it to Chicago to one of our leading pediatricians with the thymus pictures and its history. He felt that the thymus had nothing to do with it at all and that it possibly had an encephalitis rather than a thymus.

Such questions as these along with projectile vomiting should help us all to keep the thymus in mind.

As the old saying goes, "The proof of the pudding is in the eating," so it is with the results obtained by Dr. Barbour whom I wish to commend for his complete records and study of these cases.

Dr. J. W. Connell, Peoria: I notice that the filtration was not given in the x-ray statistics. I used 3 mm. of aluminum and I think it ought to be put in the record. It might be dangerous without that item, to the point of skin burns.

Dr. Orville Barbour, Peoria: Before answering questions in the discussion I would just like to say that I spent a day in Chicago before I started this paper, with Dr. Carlson and Dr. Luckhart at the University of Chicago, and Dr. A. C. Ivy. They gave me several valuable ideas and helped me with this paper.

It seems to me some of the discussors got the impression that I was talking about the thymus, when I wasn't at all. I simply wished to report my observations. I do not presume to blame the thymus or any other particular organ or part of the body. I do not think that we know enough about the thymus to blame it or any particular physiological function.

We obtained these results and are reporting them, and as I said in the paper, we do not attempt to explain them.

I wish to repeat, as Dr. Easton said, that in all of these cases other measures were tried first, measures that are commonly used, and only in those cases which these other measures did not relieve did we use radiology.

I think most of us, if it were our own child, would be willing to do most anything rather than operate.

We happened on to this method with a nephew of one of our leading internists in Peoria, and he will agree with me, I am sure, that they were anxious to do anything rather than operate.

In answer to the question about pyloric stenosis at birth, five of these twenty-one cases started projectile vomiting at two days of age, and it so happens that practically all of these cases, I think, with the exception of one were relieved with one x-ray treatment.

Dr. Connell and I feel from our observations on those cases that the earlier we get them the less radiology is required to relieve them. The longer standing the symptoms the more treatment is required.

In answer to the question about the emptying time, this was obtained in seven of our twenty-one cases. In those cases we administered the barium meal and ten minutes later took a plate and also looked through the fluoroscope. In each of those seven cases in ten minutes' time none of the barium had left the stomach.

Then we rayed those cases four hours and eight hours later and from seventy-five to ninety per cent of the barium was retained in all of the seven cases at the end of the four-hour period.

We would have liked to give barium meals in all these cases but they were practically all private cases, and expense is an item, as you all well know.

Peristaltic waves were seen in nearly every case. As I said before, we feel definitely that all of these cases were true pylorospasms. They had not been relieved by diet or atropine or phenol-barbital. As to whether they were pylorospasms, or pyloric stenosis, I do not know. I have not found anything in the literature or anyone who agrees on which case is pylorospasm and which is pyloric stenosis.

Some of our leaders claim that all cases are pyloric stenosis. Others that pyloric tumor is a result of the pylorospasm. We do not know.

In reply to the question of the doctor from Decatur about the enlarged thymus without symptoms, I think that is the common experience of us all. It is so reported in the literature and the text-books and has been true in our experience. He made the statement that if in some cases the thymus was enlarged without symptoms he did not see how an enlarged thymus could produce symptoms in other cases.

Mind you, I am not blaming the thymus. On the other hand, I would like to ask him how he explains why we have symptoms sometimes of so-called thymic dyspnea with an apparently normal thymus shadow.

The size of the thymus apparently has nothing to do with the severity of the symptoms in so-called thymic dyspnea, even though it might prove to be involved.

In answer to Dr. Cline, as I reported in the paper twenty-nine cases were of toxic origin. A certain number of these were otitis media. I did not go into detail because of lack of time. There were one or two cases of acute encephalitis.

As I said at the beginning of my discussion, we feel that possibly from our experience this gives us a remedy other than surgery for this condition. We would like to have others try this method of treatment and report their results.

CLINICAL ROENTGENOLOGY*

M. J. HUBENY, M.D.

CHICAGO

It is quite obvious that a correct diagnosis is the first step to successful treatment. Modern methods of diagnosis are built on the basic sciences and are far less controversial; some of the findings are pathognomonic, while others require assembling, which is enhanced in proportion to the intelligence, training, experience and aptitude of the physician.

Pain, which is nature's semaphore, is an exceedingly important subjective symptom. With modern methods of diagnosis pain which is a purely subjective phenomenon can almost be classed as an objective symptom. Often, for example, pressure might elicit pain, or movement might produce it; regardless of the stimulation, the question of the precise nature of the pain, where and at what times experienced, are important factors and however subjective the pain might be from the standpoint of the patient, its interpretation always presents to the physician a problem in objective diagnosis.

The experience of roentgenologists shows that the severity, persistence, or total absence of pain

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are often at variance with the magnitude of the disease. Also that many combinations or complications exist.

Roentgen diagnosis often assists in explaining the cause of pain because it reduces the intangible to the tangible.

Pain as the initial or outstanding symptom is common to many pathological conditions not always easy to differentiate.

The first consideration should be to determine whether the condition is medical and amenable to medical treatment or whether the pain indicates the onset of some serious surgical condition which may require operative relief.

For instance a number of non-surgical conditions may cause upper abdominal pain; as, simple gastric indigestion, food or ptomaine poisoning or ingestion of poisonous drugs or substances; or conditions above the diaphragm may produce upper abdominal pain, namely, pleurisy, pneumonia, pulmonary abscess or infarct, thoracic aneurysm, mediastinal inflammation or neoplasm, etc.

It is therefore quite obvious that a method which can tangibly account for the pain is a valuable adjunct.

Diseases often present themselves in an atypical and bizarre manner, occasionally a pain syndrome is absent, or very severe or exaggerated from the standpoint of patient tolerance, and sometimes minimized by a hyposensitive individual.

There are many diseases in which pain is absent; so many complications and combinations, particularly in adult life, may co-exist, that one must be on the alert to recognize them because of their influence on one another, affecting, seriously, the prognosis or occasionally prohibiting a serious surgical interference.

It is quite proper to mention just a few diseases, namely, pernicious anemia, early sarcoma, and often carcinoma, in which pain is distinctly absent or mild and the termination fatal.

The foregoing remarks will impress one with the vagaries of the most important indicator of disease, pain.

Quite a few years ago the writer was impressed by the outcome of a case in which an x-ray examination of a hip was made; the findings were negative. Several weeks later, the knee on the same side was examined radiographically,

this, also was negative. About one month later a film of this patient's left pelvis, hip and entire femur was brought in for examination, and it was quite evident that we were dealing with a metastatic carcinoma involving the middle of the shaft of the femur. Two phases of this case were interesting; first, there was no history given by the attending doctor of a previous breast amputation; second, knowing that referred pain to the hip or knee joint is a frequent occurrence, one should immediately examine the whole bony structure of the lumbar spine, the pelvis, hip, femur and knee on the affected side.

As a matter of common practice, a regional examination should be made. By so doing, a roentgenologist can dignify his work by bearing in mind a differential diagnosis, suggesting what roentgen procedures are necessary to enhance his own work and place himself in a recognized position of consultant.

Another case of referred pain, was a patient who was operated on for carcinoma of the breast with a subsequent epigastric pain; a tentative diagnosis of carcinoma of the stomach was made; a complete gastro-intestinal examination revealed a normal stomach, and a pathologic appendix.

Often a gastro-intestinal examination is made and the findings are negative, however, should one observe a dilated aorta, an exploratory operation can be averted by entertaining the possibility of a tabetic gastric crisis; here again we see the disingenuousness of pain.

Aortitis is curiously interesting, because the peculiar clinical symptoms such as dyspnea, particularly on exertion and a sense of oppression in the chest and frequent sighing respiration, indicating air hunger, are early manifestations common to numerous diseases, while pain and orthopnea develop later; and often how easy it is, to clarify the condition by a simple x-ray examination of the chest.

A swelling of any of the neck glands with or without pain should be accounted for by a neighborhood focal infection, it may be tonsillar, pharyngeal, or dental in origin; or it may be obstructive, probably a salivary calculus in the submaxillary gland; or a Hodgkin's or primary blood disease, or a sarcoma.

An interesting case in which anticipatory events were considered, showed a hard nodular

mass about the size of a pigeon's egg at the angle of the right jaw; duration about two months, no pain; x-ray examination of the chest revealed two typical sarcomatous nodules in the right lung; subsequent chest radiographs revealed numerous discrete metastatic nodules with ultimate death.

The moral in this instance was the early certitude of a fatal outcome, thereby eliminating unnecessary surgical, medical, or deep x-ray, therapy.

Following right in line with a foregoing paragraph in which was mentioned the desirability of a regional examination, two cases presenting some signs in common, namely pains in both shoulders, typify the necessity for thorough radiographic study. In one case the chest showed a large aneurysm of the transverse aortic arch, while the other showed a marked hypertrophic spondylitis of a fifth, sixth and seventh cervical vertebra producing a pain syndrome of the bronchial plexus. In both these instances the shoulder only had been previously examined and while this is quite proper, because it is sensible to examine the area apparently involved, one must look further along nerve trunks before a negative x-ray diagnosis is justifiable.

A cough or so-called nasal catarrh should bear radiographic examination from the standpoint of sinus infection or some pulmonary lesion. It is a singular thing how often silent infections occur, called silent, because pain is absent; however, other symptoms whether subjective or objective are present and should not be ignored.

One instance of thyrotoxicosis made a poor recovery until a so-called chronic catarrh proved, on roentgen examination, to be an antral infection. The silent sinus infections occur frequently.

Fractures present an interesting phase because some serious instances frequently occur with little or no pain.

The writer has had two cases of what proved to be impacted fractures of the hip in which both patients walked into the office, one used a cane, the other had no assistance whatever; both remarked of the needlessness of an x-ray examination.

Fractures of the smaller bones occur often, with little or no pain and very little disability, and it is legally and therapeutically unsafe not to have a radiographic examination.

It occasionally happens that a fracture of the lower end of the tibia, particularly a spiral fracture, is accompanied by a compensatory fracture of the upper end of the fibula. The latter is frequently over-looked because the major pain and apparent injury is at or near the ankle joint.

It is unwise to radiograph the skull over the scalp wound area only, because of the well known contrecoup fractures which happen only too often; so, in spite of the presence or absence of tenderpoints and visible contusions always use a four way examination, at least.

A few common experiences of all roentgenologists is the frequent occurrence of dental pathology without any local pain; this, of course, will be diametrically opposite to that befalling a dentist, because ordinarily a patient will consult a dentist for dental aches, hence it is quite understandable why it has taken a long time to drive home to the dental profession the actuality of dental infections as direct or contributory causes of disease processes elsewhere.

By way of an opposite illustration, a thorough radiographic examination of an acute fulminating osteomyelitis will be valueless, because a time interval is necessary to produce demonstrable bone changes; in the meantime, the surgeon will be obliged to make a clinical diagnosis with the necessary medical or surgical intervention, because waiting for x-ray confirmation might be disastrous to the patient.

Intermittent claudication is a little nicety in radiographic diagnosis because an arteriosclerosis of the blood vessels of the ankle and foot often can be demonstrated.

Hypertrophic arthritides may or may not be painful. It happens frequently that when both knees are radiographed, the one showing the most changes might at this moment be painless, although considerable pain was present some time past, while the knee that is most painful today shows little or no radiographic pathology at the present, but if examined at a later period, distinct pathology is evident and pain may be considerably subdued, absent or may continue to be severe.

Gastro-intestinal radiographic examinations offer a fruitful field explaining many abdominal aches. Anomalies in position are of such frequent occurrence that a diagnosis based on empirical topography is not permissible, because many of these variations can be predetermined

to laparotomy, thereby, in a great measure displacing an exploratory operation. Abnormal peritoneal rotation, descent and fixation may occur, making the stereotyped diagnosis of appendicitis a somewhat obscure case; we have all experienced the fact that an appendix might be anywhere in the abdomen, we might even be dealing with a complete transposition, therefore, depending on the pain-point of McBurney will lead one into error.

An instance of multiple pathology as determined radiologically explained a complete clinical history. The principal features as described and experienced by the patient were: sudden pain in left lower chest, co-incidental with strenuous lifting, presence of previously unnoticed tumor in left hypochondriac region, and dyspnea, which has continued, a total duration of four months; pain in chest more or less continuous and now accompanied by abdominal pains on the left side. Clinically a diaphragmatic hernia was seriously diagnosed. Radiologically a chronic sub-diaphragmatic pleurisy with adhesions was demonstrated complicated by multiple diverticulitis of the ascending and descending colons, the cecum and the ascending colon were situated in the left iliac region while the hepatic flexure was located in the customary area. The tumor mentioned earlier, turned out to have been a lipoma and upon close questioning had been present for a long time, so it had no direct bearing on the present condition other than confusing the issue.

A patient complained of severe low right sided cretion, complained of severe low right sided backache; radiographically, a deformity of the third, fourth and fifth lumbar vertebra was apparent, the right halves of the bodies were smaller than the left, especially the fourth, the right transverse process of the latter was small and a crow's beak osseous deposit about one-half inch in length protruded to the right, the articular facets appeared poorly developed. Clinically diagnosed as relaxed ligaments with preternatural mobility. An Albee's transplant was advised. The patient was exceedingly reluctant to have this done and wisely so, because an eventual radiologic diagnosis of chronic appendicitis was made and total relief obtained. The appendix, the terminal ileum, cecum and bladder wall were extensively involved in adhesions,

which when modified, released the peritoneal pull over the psoas muscle thereby relieving the intense backache.

All roentgenologists have experienced many cases in which pain or the absence of pain assisted in proving or disproving a clinical diagnosis, which syndrome could be explained by a thorough radiological examination, and while this paper, in a measure may appear to be redundant, an occasional repetition or amplification seems desirable to bring before us the sureties, as well as pitfalls, because in spite of the instruments of precision we now have, judgment and experience are enhanced by the unusual incident rather than the usual.

DERMATOLOGICAL ASPECTS OF EARLY SYPHILIS.*

(Salient Diagnostic Features of 109 Cases with Therapeutic Notes).

CLEVELAND WHITE, M. D.

CHICAGO

It is now generally conceded that the earlier treatment can be instituted in a luetic infection, the better chances the patient has for an ultimate cure or at least a permanent arrest in this protean disease. Early diagnosis and institution of proper treatment will usually prevent the later serious sequelae of visceral and central nervous system involvement. Thus the early clinical evidence and concomitant important laboratory aids can well stand to be briefly appraised and analyzed as to their practical value.

An opportunity to observe, study and follow the immediate results of therapy in 109 cases of early syphilis forms the basis of this report. Most of these patients were seen at the Central Clinic of the Chicago Health Department, which handles the clinical and therapeutic cases of the Division of Social Hygiene. It is the especial aim of this division to diagnose and treat early infectious syphilis of the indigent resident and floating population as a public health menace. A number were seen in the Dermatology Department of the Northwestern University Medical School and a few in private practice. Thirty-two patients had chancres, twelve had chancres with associated secondary manifestations and

*Read before the Section of Medicine, Illinois State Medical Society, Peoria, May 21, 1929.

sixty-five had secondary findings in some form or other. Ninety-two were male patients and seventeen were female. That early syphilis is disappearing from the medical world is only a myth.

MORPHOLOGY OF CHANCER.

(With Clinical Variations).

With the recent preponderant emphasis upon the importance of the laboratory findings in the diagnosis of early syphilis, the natural tendency has been to undervalue the clinical findings in a suspected primary lesion. The salient features of a chancre (both genital and extragenital) should be borne in mind in every branch of every day medical practice not only for the necessity of endeavoring to make an absolute diagnosis but also to arouse one's suspicions so as to have the proper laboratory procedures thoroughly utilized. Occasionally laboratory examinations are negative or indifferently performed and a decision has to be made whether the patient has syphilis or not. Often then an absolute diagnosis can be made if the morphology of the lesion and the associated clinical data are thoroughly studied. In the atypical cases, the diagnosis, of course, depends entirely upon positive laboratory findings.

The uncomplicated chancre is either an erosive or ulcerated papule, tends to be single, has an indurated base with a sharply defined border. The incubation period varies from twelve to forty days and runs an indolent course ranging from three to eight weeks. The satellite lymphadenitis is a very constant and important characteristic feature. In the genital chancres, the involvement is usually bilateral, beginning to be noticeable some seven days after the appearance of the primary lesion. The individual glands are usually discrete, firm, non-inflammatory, freely movable beneath the skin and are practically painless. In the extragenital chancre, the adenopathy is usually unilateral and decidedly pronounced, even in lesions near the median line.

In chancres complicated by other types of secondary infection as with ordinary pus or chancroid organisms, they may assume almost any conceivable morphological form and of course, can occur on any part of the glabrous skin. *Spirocheta pallida* may invade such lesions as chancroids, herpes progenitalis, scabetic burrows and other superficial dermatoses. In these nu-

merous atypical cases the laboratory procedures assume vast importance, as before stated. In many diseases as diphtheria, tuberculosis, and gonorrhea, the search for bacilli is extremely important and diligently performed; in early syphilis the most important laboratory procedure, the darkfield, is often grossly neglected or indifferently used—a sad commentary on 20th century syphilology.

Every suspicious lesion should be repeatedly subjected to a darkfield examination (at least three times), not waiting on nor relying on the blood Wassermann test in an early case. Only a fair percentage of chancres are absolutely typical—this finding has been emphasized by Stokes. McDonald has found many moist lesions on female genitalia to be chancres by darkfield examination, although the lesions *per se* were not syphilitic. In women, cervical erosions may be chancres as syphilis tends to be atypical in the female; hence, use of the speculum is essential for a complete physical examination in a suspected case.

Laboratory examinations of value in chancre. As the blood Wassermann becomes positive in only 36% of chancres at the end of one week to 81% at the end of five weeks (Craig), the darkfield examination is the most important laboratory procedure in the immediate diagnosis of a suspected early primary lesion. The blood Wassermann is usually positive by the end of the sixth week. The darkfield examination is best during the first two to four weeks—ranging from a possible 95% to 80% in that length of time (Moore; Stokes and McFarland). The darkfield examination should be performed on the lesion repeatedly and if persistently negative, the base of the lesion and the adjacent lymph nodes should be aspirated with a small amount of normal saline in the search for *spirocheta pallida*. Of course, no local treatment of any type should be instituted during the examination for syphilis except normal saline wet dressings. Diagnosis of the chancre before the appearance of a positive Wassermann or secondaries promises the highest percentage of complete or abortive cures (Moore and Kemp). All suspected lesions should have a Wassermann follow-up for at least 20 weeks taken at intervals of ten days to two weeks. History is often misleading and non-dependable.

Description of Spirocheta Pallida. Most saprophytic spirochetes can be removed from a sus-

pected cutaneous lesion on the genitalia and elsewhere by gently but thoroughly cleansing with a normal saline swab. The spirocheta pallida has 8 to 24 delicate spirals, moving slowly in the direction of its long axis but always keeps its regular contour although occasionally bending at an oblique angle. The spirocheta refringens is occasionally encountered around the genitals; it does not maintain its regular contour when it strikes an object and is coarser with more rapid movements; the spirals are decidedly irregular. It is usually not present if all crusts have been thoroughly removed.

Smears from the mouth may be contaminated with spirocheta macrodentium, microdentium and buccalis. The macrodentium is very coarse. The other two simulate spirocheta pallida very closely and must be studied as to motion, regularity of coil, and length of the spirals. The decision will often have to be made on clinical grounds in mucous patches of the mouth and confirmed by a blood Wassermann.

Analysis of Forty-Four Chancres. Of the forty-four chancres observed, nine were multiple ranging from two to twelve; the multiple lesions were all found on male genitalia. *Thus almost 20% were multiple* and multiplicity of chancres can quite often occur although the usual statistics are about 10%. No effort was made to pick cases but taking all positive cases (either proven by laboratory methods or typical clinically where the laboratory had failed) in the course of practical every day syphilology. Seven of the thirty-five single chancres were extragenital (20%)—*extragenital primary lesions must be constantly kept in mind.* Several very interesting and instructive diagnostic puzzles presented themselves in this series of primary lesions.

CASE REPORTS

Case 1. Value of Darkfield Examination.

A male of 28 had a small eroded area at tip of urethra of 10 days' standing. Inguinal adenopathy was very slight. The lesion itself was not strikingly a chancre but the darkfield examination was positive, thus illustrating the value of such an examination in all suspected lesions anywhere on the body.

Case 2. Value of Clinical Criteria Combined with Blood Serology.

A young man of 24 had had a penile lesion of three weeks' standing when first observed. It had the typical morphology of a primary lesion with an associated characteristic inguinal adenopathy, and he was informed he had syphilis. He had been previously

treated by a drug store clerk who assured him it was not syphilis and he was given a powder to use. As the patient was still a strong believer in his "druggist syphilologist," he was skeptical of the clinical diagnosis. Repeated daily darkfield examinations of the lesion were negative and a laboratory technician also informed him that it could not be syphilis. His blood Wassermann was strong positive, so with this confirmative information he allowed treatment to be instituted. Unqualified diagnoses in such cases by self-acclaimed "drug store and laboratory syphilologists" lay themselves open to severe censure.

Case 3. Gland Aspiration.

A man of 43 had a penile lesion of three weeks' duration, being an indurated papule with considerable erosion and a bilateral discrete inguinal lymphadenitis. He stated that he had had a darkfield examination which had been negative. This examination was repeated several times and likewise proved negative. An adjacent lymph node was aspirated and many spirocheta pallida recovered. These examinations were carried out in spite of the patient's statement that it all had been caused by a "bruise."

Case 4. Extragenital Chancre.

A man of 44 had a lesion on left superior portion of the tongue for 2½ weeks with a discrete enlarged lymph node in deep lower cervical chain near the clavicle. Three weeks previous to the onset of the lesion he had drunk from the same bottle as another man, whom he found out later to have suffered at that time with "pox" of the mouth. Repeated darkfield examinations of the lesion were reported negative and the blood serology was negative. The typical appearance of the lesion with an unilateral bubo so diagnostic of extragenital chancres was considered sufficient to make the diagnosis of a primary luetic lesion; it vanished completely under neoarsphenamin. An epitheloma had to be ruled out but there were not enough striking characteristics even to warrant a biopsy.

Case 5. Multiplicity of Chancres.

Chancres may be multiple as well as simple, although they are usually solitary. A man of 42 had twelve eroded papules on the shaft of the penis for two weeks; the adjacent inguinal glands were bilaterally enlarged, firm and discrete. Darkfield examinations of the lesions were positive. Several patients were seen with five chancres and several of this group had three primary lesions.

Case 6. Value of Wassermann Follow-up.

A man of 37 had had a penile lesion of one week's duration which had been darkfield and serologically negative. The lesion did not present enough characteristics to warrant the clinical diagnosis of syphilis but suspicious enough to warrant further investigation. The blood Wassermann was repeated at weekly intervals and became positive on sixth test. No clinical nor cutaneous evidence of a secondary syphilide could be found.

SECONDARY SYPHILIS

Early or acute syphilis includes the so-called secondary stage as well as the stage of the initial lesion; there is no real dividing line between the chancre and the secondary syphilide, for the infection is generalized during both clinical eras. While this second incubation period is usually six weeks, it can vary from 12 to 90 days (Pusey). The secondary stage may supervene before the disappearance of the primary lesions; twelve cases were observed of this type and of course such a status of affairs immediately clinched the diagnosis. While the blood serology should be positive during a florid secondary syphilis, there were certain diagnostic features in the 65 such cases studied. These features usually formed such a characteristic symptom complex that an absolute clinical diagnosis could be made in a very high percentage. The salient features will be briefly reviewed; they would at least arouse one's suspicions to draw a specimen of blood for a Wassermann test. The blood serology in all proved to be moderate to strong positive. The darkfield examination is valuable in puzzling suspected mucous patches and flat condylomata.

The symmetrical generalized distribution of a cutaneous eruption, indolent in character without any real degree of pruritus, associated with papules of palms and soles, generalized adenopathy, mucous patches in the mouth, a patchy alopecia especially of the scalp, or flat condylomata in the ano-genital and other prominent intertriginous areas makes an absolute diagnosis of secondary syphilis. In every day clinical work however, there are usually only a few of such associations present; often there is only a solitary finding of the above mentioned and of course, there can be various groupings of all these aforementioned findings. A blood Wassermann should be taken in all either to confirm or to aid in the diagnosis.

TABLE 1

Lesions of 65 cases of Secondary Syphilis Observed	
Macular (roseola)	4
Maculo-papular	7
Papular	27
Grouped Follicular & Miliary Papular.....	2
Annular Papular	8
Papulo-pustular	2
Rupial	1
Mucous Patches	6 (10)*
Alopecia	2 (8)
Condylomata lata	4 (7)
*Total cases observed.....	65

TABLE 2

Lesions of 12 Secondary Syphilis Associated with Involuting Chancre

Macular (roseola)	1
Maculo papular	2
Papular	9
(2 also involved palms and soles)	
Mucous Patch	(1)
<hr/>	
12	

There are several interesting features in the foregoing tables which should be amplified. While the macular eruption is first to appear, by far the largest number in this particular group when observed was the papular variety and its variants. In the papular group, lesions on the palms and soles are quite diagnostic when present; in all there were 9 in whom these were present and in two patients these were the only lesions present.

The annular papular or ring shaped papular lesions are strikingly diagnostic; while they usually occur particularly on the face in the colored race, two were observed in white men. One of the best examples that I ever have seen was on the face of a young white woman (not in this series).

This typical patchy non-scarring alopecia was observed in three cases; in two, it was the only finding. In one of these the eyebrows were involved along with the scalp. The lesions of the mucous membranes and muco-cutaneous junctions should be borne in mind for diagnosis and because of their contagious character, especially the so-called "split papules" at the commissures.

Persistent "sore" throats due to mucous patches and not associated with any cutaneous findings are occasionally perplexing diagnostic problems and may be called "trench" mouth, etc. The lesions are flattened and abraded syphilitic papules; they are rounded or oval in outline, may be slightly elevated and grayish in color. These patches may be slightly painful, sometimes extremely painful. The blood Wassermann should be strongly positive.

Vesicular syphilis in an adult are extremely rare and for practical syphilology, such eruptions can be considered not syphilis. The bullous syphilid of infants in a congenital infection is a noteworthy exception.

The possibility of a superimposed infection upon luetic sore throat does occur but is, no doubt, a rarity of the first degree. A man of 26 had a sore throat of two month's standing when first seen. Some time previously he had been

given diphtheria antitoxin when a smear from his throat had been positive for *B. diptheriae*. His throat felt considerably better but still remained sore. Darkfield examination then revealed spirocheta pallida and the blood Wassermann was reported positive. All cleared with specific treatment.

THERAPEUTIC NOTES.

In early syphilis, arsphenamin is the drug of choice although there are but few reliable statistics to substantiate such a statement. For practical every day syphilology neoarsphenamin is used by the vast majority of clinicians. The higher percentage of reactions to the "old" arsphenamin, its more difficult associated technical features and slow rate of administration easily sway one to neoarsphenamin. Consequently, a neoarsphenamin product that has passed the requirements of the U. S. P. H. S. can be used with almost the same results.

For intramuscular injection, sulpharsphenamin is used but care must be exercised in continuing its use where there are any reactions however mild, for serious toxic blood dyscrasias can occur. All advertisements stating its freedom from reactions are decidedly misleading. I know of two fatal aplastic anemias which followed its persistent usage in spite of numerous warnings in way of cutaneous reactions and purpuras.

Bismarsen is gaining very favorable comment from many experienced syphilologists but its worth is still to be determined. Bismarsen is a combination of arsphenamin and bismuth and is administered intramuscularly.

These drugs are all decidedly spirocheticidal and measures must be instituted to build up or preserve the patient's resistance. Mercury by injection and by inunction has been used until the advent of bismuth which must be given intramuscularly. It is yet too early to state the absolute worth of bismuth but it is filling a very definite place in our antiluetic armamentarium. Either bismuth or mercury should be used toward the end of an arsphenamin course or immediately thereafter to prevent the patient's resistance from being taken from him and suffer severe relapse of his infection which may strike important organs as the heart, eye and central nervous system.

New and untried antiluetic drugs and combi-

nations should not be used on the recommendation from some "high powered" salesman of a manufacturing pharmaceutical house. There are numerous excellent clinics in America where one can easily get ready information concerning the accepted drugs of choice.

SUMMARY

The dermatological features of 109 cases of primary and secondary lues are briefly reviewed with the importance of darkfield examination and blood serology cited, especially the darkfield.

All suspected luetic infections should be thoroughly investigated in order to prevent in the positive cases the later serious visceral sequelae of syphilis by early institution of the proper treatment. In view of the established observations that patients starting treatment during the positive darkfield but seronegative stage have the best opportunity for cure, the establishment of an early diagnosis is of paramount importance. 104 South Michigan Avenue.

DISCUSSION

Dr. W. B. Wakefield, Peoria: I can assure you that the paper was a very good one. It is a very able resumé of the subject and I have always felt like the making of a diagnosis of syphilis is an exceedingly important thing. It is much more important to make a diagnosis in the case of syphilis than perhaps most any other chronic disease early, because the results undoubtedly are much better the earlier you can get the facts.

There are one or two points about the diagnosis of the secondary, ordinary roseola that I might just add to the doctor's paper. Oftentimes in removing the clothing from the person with early secondary eruption the eruption is not easily seen until the patient's skin becomes chilled, which brings out the color in contrast much plainer.

The history is not very important. I think we all have to learn to take the history of a luetic individual with considerable latitude because it is certainly not reliable at all, and a great many of us perhaps have failed to make a diagnosis because we have paid too much attention to what the patient had to say, rather than what we could see and find out otherwise.

The glands, as the doctor pointed out, are exceedingly important and are very characteristic and with a little practice can be differentiated from most any other type of enlarged gland.

Also, I don't believe he mentioned that, perhaps not frequently, but occasionally, itching is a symptom of the disease. Perhaps the most important thing in a positive diagnosis is the finding of the spirocheta, and where all other methods fail sometimes the therapeutic test of a dose of arsenic of one kind or another will

produce a clearing up of the lesion, and also will make a Wassermann or a Kahn more reliable.

I want to congratulate the doctor on his paper.

Dr. Goldye Hoffman, Chicago: As stated by the essayist, primary lesions in women are apt to be atypical and easily overlooked; because of this fact and being obscured by the parts many can be found by examining the sexual partners of infected males, by making a vaginal inspection in women who have cutaneous manifestations and by routinely looking for suspicious erosions in women suffering from a gonorrheal infection. Hence, the use of the speculum is indispensable and the darkfield makes the diagnosis absolute. Solitary cervical erosions whose margins do not invade the external as should always be regarded as suspicious and darkfielded according to Stokes.

Stookey has recently called our attention to primary lesions manifested by a generalized edema of the cervix. The satellite inguinal adenopathy, which Dr. White has so well emphasized as an important and common finding in the diagnosis of lesions of the external genitalia is absent in the cervical lesions because of the anatomy of the draining lymphatics.

Just a couple of weeks ago a girl was sent to the clinic with positive gonococci and a 4+ Wassermann. She refused to take treatment for syphilis, saying that she had had a negative blood test five weeks previous. On inserting the speculum a suspicious looking erosion on the posterior cervical lip was found. Darkfield showed presence of spirocheta.

Dr. Cleveland White, Chicago: The discussion has been very fruitful in bringing up several important phases which deserve more emphasis than accorded in this paper covering a rather large subject.

Dr. Wakefield stressed the importance of looking for the early macular rash—the roseola—which is usually the first (and sometimes the only) cutaneous manifestation. This is the most common secondary and often only found by stripping the patient and examining under a good light. In this particular series the papular finding was the most common encountered. As Dr. Wakefield stated, the history is very unreliable and often grossly misleading. If syphilis is suspected, a thorough investigation should be instituted regardless of the patient's economic or social status.

Sulpharsphenamine is believed to be more effective when given intramuscularly than when injected intravenously and thought to produce fewer serious reactions when given by the intramuscular route. It is the only arsphenamine well tolerated intramuscularly and is an excellent preparation to use in infants with early congenital syphilis, in very fat patients and those with difficult veins, and in selected cases of cardiovascular syphilis. The unusually high number of serious reactions in adults (dermatitis and blood dyscrasias) have led many not to use sulpharsphenamine unless unable to give one of the other arsphenamine products intravenously. When used by either route, especially in adults, one must be constantly on the alert for any reaction, however mild.

Dr. Hoffman's statements regarding recent findings

regarding a chancre in the female open a field worthy of more serious study and further detailed clinical observations with laboratory checks. While the lesions of syphilis tend to be atypical in women and usually invade the viscera with less organic changes than in the male, the seriousness of the infection in the female as a potential source of congenital transmission is sufficient reason to ferret out any possible early case.

In conclusion, darkfield examinations in any suspected primary lesion and the blood Wassermann test in any suspected secondary exanthem are invaluable aids in establishing or confirming the diagnosis of syphilis. The earlier that a positive diagnosis of syphilis can be made the better ultimate results the patient will derive from his treatment.

INTRAOCULAR HYPERTENSION AND THE INTERNIST*

C. W. GEIGER, M. D., and J. H. ROTH, M. D.

KANKAKEE, ILLINOIS

We all feel a general pessimism as to the entire problem of intraocular hypertension. Theories have been presented; new ones are and will be presented in the future. In the light of our present knowledge this subject is still very unsatisfactory. Occasionally we encounter very gratifying results both medically and surgically and again our best efforts only meet with dismal failure. The very multiplicity of theories and treatment of the subject of intraocular hypertension make it only apparent that this condition still belongs to a great measure in the field of speculation. Nevertheless, it is an ever present problem. While this problem, even though so largely speculative requires not only the most careful consideration and study but also systematic investigation and research, it may be that the repeated consideration of this subject may ultimately suggest a method of approach that will be productive of results.

A large number of conditions obscure a generation ago are now relegated to the realm of either focal or systemic infections and are being more or less successfully handled from this point of view. As long as we have no etiological theory that is entirely satisfactory we can ill afford to be dogmatic.

Several years ago Risley gave us a fairly decent working basis for our problems of intraocular hypertension. While this quotation has been cited many times it is still worthy of repe-

*Read before the Section on Eye, Ear, Nose, Throat, Illinois State Medical Society, May 22, 1929.

tition. "Glaucoma is a disease coming on at an age when wear and tear, harrassing vicissitudes, misfortunes, exposure, overwork and vicious living have sapped the physiological foundations of life; when infection has found entrance to the organism through the doorway of the epithelium and when a variety of toxic, auto-toxic and other influences have set up vascular and cardiovascular diseases, associated nephritis, uveitis, high blood pressure, etc. Glaucoma, in fact, rarely occurs in individuals in good general health."

The opening sentence of Elliot in his *Treatise on Glaucoma* is: "The term 'Glaucoma' is not the title of any one single disease. It is rather a convenient clinical label for a large group of pathological conditions, the distinctive feature common to all of which is a rise in the intraocular pressure."

With our limited knowledge of the cause of this condition and with such excellent warnings we are surprised that so little attention is paid to the general physical condition of the patient. In fact, we have all been so interested in the theories of the mechanism of intraocular hypertension and the various spectacular treatments for its relief that we have more or less lost sight of the patient. Remote instances of the reduction of intraocular hypertension by relief of the physical condition is of no great value. Almost all of us can cite an occasional case where the removal of infected teeth, tonsils, appendix or gall bladder improved the intraocular hypertension, but this in itself does but give us the right to expect the same results in the next case we meet. We do not claim that every case of intraocular hypertension can be improved by the removal of focal or systemic intoxication but we do insist that this is an auxiliary means of treating a very unsatisfactory condition. As long as we are in doubt as to the exact knowledge of intraocular hypertension, let us avail ourselves of every opportunity to combat this condition and the internist is one of our best allies. Vascular hypertension is now being managed along these same general lines and we meet vascular hypertension in a vast proportion of our intraocular hypertension cases.

Vascular hypertension leaves its devastating mark on nearly every organ of the body and the eye is not universally exempt. While every pa-

tient carrying vascular hypertension does not always show intraocular hypertension yet it is seldom that intraocular hypertension is not accompanied by some vascular changes. In the various vascular changes the internist looks for focal or systemic infection or intoxication. A systemic intoxication that is frequently overlooked by the oculist in ocular hypertension is syphilis. In Elliot's latest and very comprehensive "*Treatise on Glaucoma*," syphilis is mentioned at no time as a causative or relative factor in intraocular hypertension. In almost any theory that we accept of intraocular hypertension lues should be considered. Whether lues has any influence on the pathogenesis of intraocular hypertension we are not in any position to comment but we cannot see how it can be excluded from consideration.

Every oculist can call to mind instances where he has operated for intraocular hypertension with what he considered absolutely perfect surgical technique only to find the vision gradually and surely fail to blindness and with the post operative tension always within normal limits. Elschnig regards glaucoma without or with very little hypertension as exceptionally serious. Almost all symptoms except tension are present to substantiate the diagnosis. Miotics and operative procedures in such cases are of little avail. Elchnig maintains that the atrophy of the nerve elements is due to the change of the intraocular fluids. This is not purely a local condition, but must of necessity be secondary to some vascular or neurological change. In instances of this kind only the most rigorous investigation by the internist is of any value, and it is here that we meet our greatest difficulty, unless we can impress the internist with the seriousness of the visual prognosis. It may be a general disorganization of the secretions throughout the entire organism. It may be a general endocrine dyscrasia or systemic infection—that is not our particular worry, but the problem of the internist; however, it is our duty to prod him into the investigation. As a rule, we must be dogmatic with the internist and insist on thorough examination.

The problem of focal and systemic infections and intoxications is becoming a perplexing one. When Benedict and Leon White insist that a devitalized tooth is as much a menace as an actu-

ally abscessed root as demonstrated by x-ray, how are we to consider an old chronic appendix, gall bladder, prostate or cervix. Of course, this again is a problem for the internist, but does this same internist realize our position in dealing with vision? We doubt it. Yet, many times we have been satisfied with the verdict of the internist and have operated only to find that the visual loss progressed and after a more searching investigation find some general pathology that seemed accountable for the condition. We wish to cite a very interesting example.

A man aged 50 was first seen by us in 1920. He was a farmer and gave a history of having been struck in the left eye many years before with a hedge thorn. Two months before we saw him he complained that his vision in the right eye was noticeably hazy. When we saw him the first time we found that the left eye was staphylomatous and stony hard. The vision in the right eye was 15/10-3, but the tension was 52 with a Gradle tonometer. His family physician gave him a physical examination; he was advised to have his teeth extracted. The tension in the right eye was better for a time, but returned to the original pressure. He would not submit to an operation on the eye, but finally did consent to having his tonsils removed. Again a short period of improvement in the tension, but we were again after a few weeks confronted with a high intraocular tension. After about six months of observation and with the fields and vision failing we insisted upon operation. An iridectomy was done. The tension improved for a period of months and then returned to its original status. After a year the left eye which was staphylomatous became irritated, red and painful. As this was a blind, hideous eye, anyway, we decided to remove it. Upon his entrance into the hospital a routine blood and urine was done and we discovered for the first time that he had a positive Wassermann. Upon anti-luetic treatment the tension rapidly returned to normal and has remained within normal limits since. His fields and vision have remained stationary since 1921. If we had had a complete return of this man's physical condition the first week it is doubtful that we would have had as much loss of vision or the difficulty that we experienced.

We do not wish to convey the idea that we think this condition can be handled solely by attention to the general physical condition and miotics. In a condition as unsatisfactory of management as intraocular hypertension no one course of treatment can be followed in all cases. Of course, consideration must be made as to when we arrive at our diagnosis. We assume that the earlier a diagnosis can be made the less pathology is demonstrable. If a diagnosis can

be established before definite pathology is present the better opportunity we have of postponing operative procedure. The greatest aid we have in the early management of these cases is the internist. Later in the disease when pathology is definitely established nothing short of one of the operative procedures is of any avail. Yet with only this outlook ahead the internist should not be neglected, because he may often save us embarrassment either during or following operation, for we all know how disappointing operations can sometimes be in this condition.

When operation is imperative we should still turn to the internist. The exact knowledge of the patient's general condition should be known. Perhaps some of the expulsive hemorrhages could be avoided by venesection immediately preceding operation. Perhaps some of post operative disasters could be avoided through cooperation of a competent internist.

Many of the so-called glaucoma cases are in reality cyclitis with intraocular hypertension. We have all had the experience of following a family physician who was keen enough to detect hypertension and handled the case with miotics until an iris Bombe developed. Of course, the oculist can readily make a differential diagnosis between cyclitis and chronic simple glaucoma, but where we are confronted with a cyclitis with tension we are helpless without the aid of the general medical man. Just recently we have had the experience of having a patient referred with a diagnosis of glaucoma and the information that the patient had been placed under miotics. Careful investigation showed the characteristic findings of cyclitis. The family physician was considerably perturbed when we sent the patient back with the pupil fully dilated and instruction to investigate the patient's general physical condition. The intraocular tension in cyclitis cases can assume proportions that are sometimes alarming. However, such cases are almost entirely in the realm of general medicine, with the oculist as merely a consultant.

We as oculists are not making our diagnosis of intraocular hypertension early enough. This may not be in any manner our fault in a large majority of cases. We in many instances do not see the patient until irreparable damage has been done. These are usually the drifters and they will probably drift away from us before we have

an opportunity of completing our findings or instituting satisfactory means of combating the hypertension. On the other hand, we have patients under our observation for years and our records give us an indication of what their normal vision should be. When we find any deviation from normal in these patients it is our duty to investigate and if they are in the presbyopic age, intraocular hypertension should be one of our first concerns. We do not think that we should wait for definite cupping of the disks, because when we have this condition we also have irreparable damage. The light differential and the paracentral scotoma are our earliest findings and it is upon these that we must base our early diagnosis. It may be only by repeated observations that we can demonstrate any hypertension. We may and often do find difficulty at this stage of convincing the patient that there is anything dangerously wrong with the eyes. It is at this point that the internist may be of great value to us. He may be able to impress that patient more favorable than we can or failing in this he may be able to relieve the patient of some of his pathology and indirectly some of his intraocular hypertension.

Dogmatically treating intraocular hypertension either with miotics alone or surgery alone is rank empiricism. For ages headaches have been treated in this manner and the laity has lost faith in the medical man because of it. Surgery has its risks, as we all know, and while we are fairly convinced that the large majority of true chronic simple glaucoma patients eventually come to operation why should we submit them to the risk of surgery sooner than is absolutely necessary? If we can by co-operation with the internist postpone the operative risk without danger to the fields and vision we are practicing ophthalmology in its highest sense. But what is the danger of such conservatism? We are liable to give the patient a sense of false security and he may neglect to give us the opportunity of regular observations. Many of the patients may apparently disappear for months to return with considerable loss of fields and vision. This sense of false security may be instilled by the internist unless he can be made to realize the seriousness of the ocular condition. However this risk is no very valid argument for the man who insists on early surgery. We believe that by cooperation

with the internist and by the use of miotics that surgery can be postponed and in some cases obviated entirely. However, we must have the patient under constant observation. When we find fields and vision failing we must resort to surgery and immediately. Our argument is simply this—that surgery can be avoided or postponed in many cases of intraocular hypertension by relief of the causative factor, an element that is being largely disregarded by the oculist, the general physical condition.

Let us heed the masked warnings of Elliot and Risley. The one states that intraocular hypertension is only a symptom and the other that it rarely occurs in a healthy individual. In the first case it is a symptom of what? A symptom of some metabolic imbalance. Risley says that it rarely occurs in a healthy individual. Consequently, drawing our conclusions from two old masters we would say that it is a symptom of something wrong in a person in poor physical condition. Thus when we meet intraocular hypertension we may expect to find an individual in the stage of physical wear and tear, whose organism has been affected by the changes of advancing years.

DISCUSSION

Dr. Thomas D. Allen, Chicago: Much work has been done on metabolism; first, because of a desire on our part to add to the wealth of mankind and second, because of a desire on the part of scientists to add to general knowledge. As a result, we should be able after studying them to give our patients some worth while advice or treatment. It is rather discouraging to refer these cases to the internist, because nearly always they are sent back with the statement that no important pathology can be found. If our knowledge of the chemistry of the body were increased, and it is gradually increasing, we might be able to find some causative factors. Dr. Roth's reference to syphilis was most interesting. Of course, it should be treated wherever found. Syphilis will chance the chemical metabolism of the body, and it is conceivable that as a result ocular hypertension may follow. With regard to high blood pressure. We have found few cases of ocular hypertension with high blood pressure. In fact, when the blood pressure is taken as a rule we find that it is remarkably low. Of course, if the blood pressure is high any treatment that is directed toward lowering it will usually be of benefit to the patient. So far as early diagnosis is concerned, it seems to me that is our vital point of attack. The earlier we can diagnose it the more time we have to treat the patient before the necessity of operation and the more time we have in which to

co-operate with the medical men. We should insist, as Dr. Roth has said, upon the medical man's investigation of every possible source, every possible cause of deterioration of the body. So far as venesection is concerned, that is a mighty good idea. A similar idea is that sugar, injected intravenously before operation, will bring down the ocular pressure and may prevent an expulsive hemorrhage.

Dr. E. V. L. Brown, Chicago: There must be something in the general condition of the patient that is the causative factor. The only series I have studied was with Dr. Irons, fifteen cases. We could find many evidences of previous trouble in the history, laboratory findings and the course of the case, but there was nothing we could put our fingers on as to the cause of the glaucoma.

Dr. Harry Woodruff, Joliet: The point of syphilis as a causative factor in glaucoma is of interest. The work of Elliot does not mention the word syphilis once in connection with glaucoma. I searched carefully to find out what his idea was with regard to syphilis as a cause of glaucoma. Of course, it is a factor in secondary glaucoma, because it is a very prominent factor in uveitis. Dr. Brown answered that question as to the relationship of the general physical condition to primary glaucoma. So far, we have not been able to put our finger on anything that we could say definitely was responsible. We must distinguish between simple glaucoma and inflammatory glaucoma. When we come to talk about health and disease we cannot distinguish between the conditions. There is no such thing as absolutely perfect health, so that the internist, if he goes far enough, will find something wrong with every individual. It is a far cry in many of these cases to pin this or that condition down as a cause of glaucoma. Even syphilis; it is not absolutely true that that is a factor in glaucoma. Having an internist in my family, I am more than ever strong for examination by an internist. The more information you have about your patient the better able you are to properly take care of him. I would not be in favor of going very far in a case of chronic simple glaucoma without all the information I could get—Wassermann, blood pressure, and a lot of other things, but that takes more or less time. If my patient has chronic simple glaucoma and I am absolutely satisfied with the diagnosis, of course, I would want to know the other conditions, but if they were normal and satisfactory I should not be in favor of postponing operative procedure, because I am quite convinced that there is no cure for chronic simple glaucoma other than operation.

Dr. Derrick T. Vail, Jr., Cincinnati: I read a recent article by Redslob of France. He has done some work in injecting certain substances into the vitreous of some patients, hopeless cases, measuring the intraocular tension before and after. If the hydrogen ion concentration was raised, the tension would be raised, and vice versa. He used this as a method of reducing intraocular tension by injecting solutions which have a low hydrogen ion concentration into the

vitreous. This made me believe that it is not always the foci of infection that have everything to do with the condition, but the state of the vitreous, whether swollen or reduced in content. A substance that will cause the vitreous to shrink I believe will have an effect on the tension.

Dr. Jesse H. Roth, Kankakee (closing): We may have alarmingly high vascular hypertension that may run on for years, and yet not cause the patient any trouble. We have intraocular tension which does not cause any loss of fields of vision. In a vast majority of patients with intraocular tension, with glaucoma of the non-congestive type, we have a history of constipation almost invariably. When the internist takes these patients in hand and ends their constipation we have a reduction for a time in the intraocular tension. There is no question that these non-congestive types of intraocular tension almost invariably come to operation.

TRANSFUSION OF WHOLE BLOOD IN THE TREATMENT OF ACUTE HEMOLYTIC STREPTOCOCCIC SEPTICEMIA*

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There probably has been no recent surgical therapeutic procedure that has received such a varied opinion as to its efficiency as the transfusion of blood. In the treatment of acute streptococcic septicemia, blood transfusion has played a leading role. Much was expected, and in many instances, miraculous cures were hoped for after even a single transfusion. Like other priceless procedures the use of blood transfusion was often misused and instead of employing that procedure as an aid in the treatment of acute streptococcic septicemia, it was, and still is, used as a specific therapeutic agent. By the cases here reported I wish to show that blood transfusion alone, or in combination with other treatment, has not been of any great value in the treatment of such septicemias and the prognosis depends more upon the type of invading organism than to any treatment response to transfusion of blood.

It is well to consider first the etiology of acute streptococcic septicemia. There seems to be some difference in the exact classification but the classification of MacCallum,¹² as follows, is quite satisfactory:

Streptococcus hemolyticus is that organism

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which is often seen in puerperal sepsis, wound infections, etc. It grows in long chains and causes laking or hemolysis in blood agar plates.

Streptococcus viridans, often seen in sore throats, etc., is a short-chained form producing a green discoloration in blood agar plates, but no distinct hemolysis.

Streptococcus mucosus, causes streptococcus pneumonia, tonsillitis, etc. This organism is an encapsulated, round, lance-shaped coccus producing no hemolysis or green colonies in cultures. It forms glutinous colonies and is extremely virulent.

Hemolytic streptococci occur in various parts of the body, often without clinical manifestations as in diseased tonsils, joints, about the gums and teeth,⁹ infections of the middle ear, mastoid and ethmoid disease.²⁰ They may be found on the surface and in the crypts of apparently normal tonsils as shown by Davis.³ They have been recovered from surgically removed appendices.²⁰ From such foci of infection these streptococci enter other tissues because of a "lowered general or local resistance" but the exact manner in which tissue is damaged in an acute streptococcic septicemia is rather vague. The organisms from mucous surfaces penetrate into the tissues through the intercellular spaces where they produce a diffuse inflammatory change and from here enter the blood stream through the lymphatics resulting in a general bacteremia. There may then follow a generalized streptococcic septicemia; the walls of the blood vessels may be attacked producing infected thrombi, from which there are continually shed into the circulating blood fresh showers of streptococci.

Streptococci attack any and all tissues in the body, either directly destroying the tissues or in instances of more mild infections causing such damage as to make the invasions of other less virulent organisms a simple matter. Conversely, hemolytic streptococci may enter the general circulation as secondary invaders—for example, through the respiratory tract after, or during, upper respiratory infections. The exact intracellular changes that occur are not known. The exact physical or chemical action of the streptococcic toxins, like many other fundamental things is not clear. To describe its action as "protoplasmic poisons" is not satisfactory.

There may be changes in the walls of the tissue cells, thereby producing electro-chemical changes recently suggested by Crile.² Until these facts are known the treatment of acute streptococcic septicemia will be difficult.

CASE REPORTS

The following case report is a classical example of the overwhelming toxemia in an instance of acute hemolytic streptococcic septicemia.

Patient: 31175, R. S., white, 37 years of age, single, a laundry foreman by occupation, was admitted to Henrotin Hospital on November 18, 1926.

Complaint: Fever and chills, "aching all over," restlessness, insomnia, swelling of the wrists and right ankle.

Onset and Course: Patient had an attack of "influenza" about two weeks before entering the hospital. This attack of "influenza" lasted for about five days, then the patient resumed work as a laundry foreman. He worked four days when and while at work experienced a most severe chill followed by a high fever. He entered the hospital in a semicomatose state.

Past History: Mumps and measles during childhood, influenza while with the army in France, 1918, "heart trouble" for a short period after influenza in 1918, frequent colds. Herniotomy three years ago.

Family History: Father and mother living and well, one brother and one sister living and well. No tuberculosis or malignancy in family.

Physical Examination: Revealed a well developed and well nourished male of about 37 years of age who appeared acutely ill and when first seen was suffering from a severe chill. Temperature, 105 F.; pulse, 110; respiration, 24. Frequent periods of delirium.

Head and Neck: Face flushed, mouth dry, breath offensive. Scalp negative, sclera clear, pupils equal, round, dilated, but reacted to light and accommodation. Ophthalmoscopic examination negative. Nose and ears negative. Tongue was dry and coated. Pharynx markedly hyperemic.

Thorax: Symmetrical, expansion normal.

Lungs: Palpitation and percussion negative, auscultation revealed a few moist crackling rales posteriorly below each scapula.

Heart: Rate increased, sounds somewhat muffled, a slight systolic murmur heard at the apex, not transmitted to axilla.

Abdomen: Full but not distended, no rigidity, but there were areas of tenderness throughout entire abdomen.

Extremities normal.

Laboratory Examination. Blood: Erythrocytes, 4,500,000; leucocytes, 14,000; polymorphonuclear leucocytes, 78; lymphocytes, 17; basophiles, 17.

Blood type, 4 (Moss classification).

Urine: Albumin 1 plus, many granular casts; specific gravity, 1020.

Spinal Fluid: Fluid slightly tinged with blood, probably traumatic. On standing the cells settled to

the bottom of the tube and the fluid was clear. No pus found, only red cells seen with an occasional leucocyte. Culture on blood agar negative.

Blood Culture: (Iodine-alcohol Preparation). Two cultures taken in vacuum tubes and incubated for 24 hours. Examination revealed long-chained streptococci in both tubes. Plates were made and these colonies showed hemolytic zones; apparently they are streptococcus hemolyticus. Widal negative.

Provisional Diagnosis: Streptococcic septicemia of undetermined origin.

Operations: 11/23/26. Whole blood transfusion, 750 c.c. 11/24/26. Whole blood transfusion, 750 c.c.

Progress: The following day patient complained of pain in various joints and pain in abdomen but there was no definite point of tenderness. Temperature, 105 F; pulse, 102; respiration, 22. 750 c.c. of blood was transfused; no reaction; no clinical improvement; blood culture again revealed long-chained hemolytic streptococci.

Third Day: Temperature 105 F.; pulse, 102; respiration, 22. 30 grains of sodium salicylate and 20 gms. of glucose were given in 800 c.c. normal salt solution. His temperature immediately went down to 103; pulse, 108; respiration, 24. Sodium salicylate was given twice daily in doses of 15½ grains each; morphin was required to keep the patient quiet. His ankles and wrists became more painful and slightly swollen. Some rales heard posteriorly over both lungs. He complained of great pain over entire body, especially in his wrists and ankles.

Fourth Day: Respiration was profuse and he complained of pain. Septic temperature.

Sixth Day: Profuse perspiration; patient delirious.

Seventh Day: Delirium continued. Buttocks and shoulders bluish red.

Eighth Day: Lost control of sphincters, patient was very weak; spinal puncture negative. Petechiae over entire body, patchy hemorrhagic areas, dullness over lungs posteriorly.

Ninth Day: Patient about the same, except that the petechiae had increased in size. He died on the eleventh day. Post mortem examination not obtained.

Miller¹³ reports an instance of a case of hemolytic streptococcic septicemia (short-chained streptococci), following streptococcic hemolyticus angina, treated by the administration of mercurochrome in the manner described by Hugh Young of Baltimore.²⁴ He administered 600 mg. of mercurochrome in solution and 20,000 units of diphtheria antitoxin. After a rather prolonged treatment this patient recovered.

Neff¹⁴ reports the following four cases of septicemia where blood cultures revealed hemolytic streptococci. 1. Infant of three months with erysipelas. 2. Three-year-old child with hemolytic streptococcemia with multiple abscesses.

3. Six-month-old Mongolian with erysipelas. 4. Three-week-old infant with erysipelas. These were given numerous blood transfusions. He states that the first two children recovered and seemed to be markedly benefited. The last two children died from sepsis; the third child having received four transfusions and the fourth dying after one transfusion. Neff believes that unmodified blood is preferable to citrated blood and that the potency may be increased according to the method of Wright.¹⁸ He does not mention whether the streptococci were of the long-chained variety but this is inferred because we assume that the hemolytic streptococci are of that type.

R. E. Stetsen²³ reports three cases of streptococcic septicemia. The two patients whose blood cultures revealed hemolytic streptococci died and the one where a streptococci viridian was found recovered.

Treatment. The prophylactic treatment should deal primarily in eradicating the possible source of the septicemia. Infected tonsils especially should be removed and other chronic lesions of the upper respiratory tract should be carefully observed. This, however, could not be carried out in the foregoing instances.

Usually, however, the patient comes to us with an overwhelming infection, typically a septicemia that requires immediate and intensive treatment.

Various chemicals as acriflavine, mercurochrome, etc., have been used both as direct specific antiseptics and to render the invading organisms less virulent and more susceptible to the action of the leucocytes. There seems sufficient evidence to lead one to believe that no chemical has yet been found that has a special or specific affinity for the hemolytic streptococcus in the blood stream. If chemicals are injected in the blood stream in sufficient concentration or in sufficient amount to kill the hemolytic streptococci, the chemicals would then undoubtedly destroy the leucocytes or, at least, render them less efficient.

Fleming⁴ states that the bactericidal power of human blood may be altered but in one of the following methods:

1. By increasing the opsonic power of the blood fluids by the use of vaccines that may act

in a specific or non-specific manner. He believes also that this induces leucocytosis.

2. By methods of increasing the number and the efficiency of leucocytes using the uppermost layer of corpuscles in centrifuged blood or by the injection of nuclein. He also states that the leucocyte content of the donor's blood may be increased by injection of nuclein previous to transfusion.

3. By physical methods with a mercury lamp. Exposure to sunlight or a clamp causes an increase in the bactericidal power of the blood while an over-exposure diminishes that power.

4. By chemical methods: (a) Direct or specific antiseptics, such as mercurochrome or arsenical drugs. (Colebrook, quoted by Fleming, states that arsenical drugs seem to have remarkable affinity for streptococci pyogenes, but that the concentration necessary for a direct action upon the bacteria would undoubtedly injure the leucocytes.) (b) Drugs that render the invading organisms less virulent, as mercurial salts. Fleming believes that mercurial salts, as mercuric chloride, have a specific action on the hemolytic streptococci in that it renders them less virulent, less viable and more susceptible to the action on the leucocytes. There is considerable difficulty in determining whether or not mercurochrome has any specific action on hemolytic streptococci in vivo and there can be no better authority, perhaps, than Young, who states in a personal communication that he has no actual proof that mercurochrome given intravenously is directly germicidal in its effect on streptococcus hemolyticus. He now believes that usually this drug when put in the blood stream is not directly bactericidal, but rather that it accomplished its result by in some way stimulating the body defenses or less probably by the formation of some new compound in vivo. Colston and Hill showed several years ago that there is an actual increase in the bacteriostatic action of the blood after the intravenous administration of mercurochrome. Mercurochrome seems to be the only probable chemical of value in combating this overwhelming infection and does so perhaps not by direct antiseptic or lethal action, but as mentioned, causes them to become less virulent and more susceptible to the action of the leucocytes. Fleming⁴ has shown where intravenous injection of hypertonic salt solution

produced similar non-specific effects, thereby generally increasing the bactericidal property of the blood. Young¹⁹ reports one series of thirteen cases of hemolytic streptococcal septicemia treated with injections of mercurochrome where five were cured and two improved, or a failure of only 30.7%; while in three cases of streptococcal viridians septicemia, similarly treated, one was improved, or a failure of 66.6%. This is exactly the opposite of our observations in instances where blood transfusion was resorted to alone or in combination with other treatment.

The use of anti-streptococcal serum is advisable in all cases, and, at present, seems the most logical auxiliary remedy. Dicks' work with anti-scarlet fever serum has been so successful that the production of a satisfactory bacteriolytic serum for all hemolytic streptococci is hoped for.

Whole, unmodified blood transfusion probably furnishes the best means of combating acute hemolytic streptococcal septicemia. Brines,²² Unger and others have quite conclusively shown that the destruction of the invading organisms depends largely upon the phagocytic power of the leucocytes and the opsonic power of the plasma, properties of the blood that are altered when blood is transfused in a modified form.

Indications for Transfusion. It is sometimes difficult to determine when a transfusion should be done, because in the introduction of blood lies the potentialities of marked clinical betterment or harm, and the procedure is no less dangerous when misused than efficacious when properly employed. Transfusion should be performed hesitatingly in instances of insufficient renal function, cardiac dilatation, myocardial degeneration with low diastolic blood pressure, deranged liver function and pulmonary or cerebral edema.²⁵ In such instances the transfusion of compatible blood may precipitate sudden detrimental effects. Patients actually dying from sepsis are not improved by blood transfusion, due to the inability of greatly damaged excretory organs to properly care for the large amount of suddenly introduced foreign serum.

A given subject, in suffering from an acute hemolytic streptococcal septicemia may, if given compatible blood, experience an immediate reaction perhaps to a greater degree than an indi-

vidual suffering from a secondary anemia because the liver and kidneys of such individuals are, because of the sudden severe toxemia, mechanically or physiologically limited in their capacity to take care of the large volume of foreign protein suddenly introduced. Transfusion should then be given with caution, especially if there are evidences of edema, whether pulmonary, cerebral, renal, or peripheral. Early transfusions are therefore not only vastly more beneficial but far less dangerous.

Selection of Donors. Frequently, relatives or friends of the patient are found whose bloods are compatible. Usually, however, it is necessary to have on hand a list of suitable donors. Such a list will avoid unnecessary delay and suspense in performing a transfusion. Newspaper advertisements usually supply a sufficient number of individuals who may be called upon to act as donors on short notice. Records are made of the applicant's name, address, telephone number, age, weight, Wassermann reaction and type of blood. Wassermann and Kahn tests should be made as a routine, and may be considered an imperative preliminary procedure in the examination of applicants. We have found that about 12% of all applicants answering advertisements have positive Wassermann reactions. Donors should, of course, not be used who give histories of recent infectious disease. Prospective donors weighing under 130 pounds should be discouraged. Age is not an important factor, though donors between 25 and 45 are preferable. In no circumstances do I employ minors to donate without the written consent of their parents or guardians, and then only in rare instances when no other donor is readily obtainable. Temperamental or hysterical people, especially if relatives of the patient, should not be used. Their anxiety is often followed by a syncope that usually interferes with or terminates an otherwise successful transfusion. Professional donors who are the least unwilling are an abomination. There is a marked tendency for them to compare the technique of different operators. They are continually fault finding, removing dressings from their arms and infecting their wounds by removing their own stitches, etc.

The dangers of a transfusion to a donor are practically negligible. By the use of indirect

methods now employed, a donor should not become infected from a septic patient. Occasionally one faints, but usually from the psychic effect of the character of the operation, rather than the anemia produced. Should there be any tendency toward syncope, the head of the table is lowered until the donor recovers. In such cases the flow of blood is slow, due to the dilatation of splanchnic vessels that leaves less blood in the peripheral vessels. It does not seem wise to remove more than 800 c.c. of blood from a donor at one time, and if more blood is needed, a second donor should be employed. After the transfusion the donor is instructed to lie quietly for one hour, during which time fluids are given freely to restore blood volume.

Apparatus. I shall not discuss here the numerous instruments for blood transfusion. I believe, however, that whole blood should be employed. Any method where, by the use of a simple instrument, a known amount of whole blood can be rapidly transfused, without subjecting the donor to infection or destroying his arteries and without altering the blood chemically, biologically or physically, is the method of choice. With the exception of a few cases where infants were transfused I have very advantageously used Percy's modification of Kimpton Brown paraffined glass tube. By the use of this tube, as much as 600 c.c. of blood can be transfused in less than six minutes. During this time the blood does not cool and is transfused in its normal state without the addition of anticoagulants or loss of any of its constituents by defibrination.

Post-Transfusion Reactions. Post-transfusion reactions may briefly be grouped as follows: 1. Reactions due to introduction of incompatible blood. These can be prevented by proper preliminary typing and cross-matching of the donor's and recipient's bloods. Though the Moss classification places all individuals into four groups, it has been shown by the extensive work of Guthrie and Huck⁶ of Baltimore that subgroups exist. Hence the necessity of selecting donors, not only with respect to their positions in the Moss classification, but also on the basis of the relation of their agglutinin-agglutigen content to prospective recipients. Cross-grouping will readily eliminate this type of post-transfusion reaction.

2. Disturbance of the colloidal balance of the recipient's serum caused by the donor's serum, often is manifest by a slight reaction. In such cases there is an early and transient appearance of serum albumin in the recipient's urine. The immediate disturbance following changes in the colloid balance seems to be in the general capillary engorgement and stasis, usually relieved by a vaso-constricting agent such as epinephrin or ephredrin, helpful agents that should always be at hand.

3. Lysis of bacteria of damaged tissue, a delayed recipient response, usually occurs from one to four hours after the introduction of the donor's blood. It is not a hemolytic crisis, as the erythrocytes and platelets are definitely increased in number and no blood pigments are ordinarily found in the urine. Yet, in instances of acute hemolytic streptococcic septicemia, blood pigments are found in the urine and this factor is not of importance in determining the cause of such reactions. Clinically, there are exhausting chills with subsequent fever. It seems that the reaction is due to a bacterial cleavage or cleavage of damaged tissue proteins by the donor's blood increasing the bacteriolytic or proteolytic power of the recipient's serum.

4. Protepexic liver function of the donor may be of such a character that would permit partially or imperfectly split proteins coming from his digestive tract to go through the liver and, borne with comparative impunity by the donor, may be highly toxic to the recipient when introduced into his general circulation. This is especially noticeable when some donors are used immediately after their having had a heavy meal. The reaction resembles a non-specific shock as a Widal crisis—in that there is a slight and transient reduction of the number of leucocytes and prolongation of the coagulation time.

5. Protein shock certainly seems to be an important factor in the production of post-transfusion reaction. Protein shock differs from anaphylaxis in that it is a condition of increased susceptibility, due to a non-specific protein, and that no previous sensitization is required. Passive anaphylaxis can be prevented by thorough questioning and complete examination of the prospective donor.

RESULTS

The use of whole blood transfusion alone in the treatment of acute streptococcic septicemia is not always gratifying. When performed early, at the very onset of the course of infection, repeated transfusions of whole blood are more helpful. The use of antiseptics, as mercurochrome, given intravenously, will either have some direct action upon the streptococci or render them less virulent and more liable to the attack of the leucocytes of the patient's and donor's bloods. In instances where the blood cultures reveal long-chained hemolytic streptococci the prognosis is particularly grave and transfusions are futile as shown by the accompanying table. Where short-chained organisms (*streptococcus viridans*) are found the prognosis, as in this series at least, is slightly more hopeful. (Table I).

Of twelve patients of streptococcic septicemia, similarly treated by whole blood transfusion for definitely proven streptococcic septicemia, ten died and two recovered. Of the ten fatal cases long-chained hemolytic streptococci were recovered in six instances, short-chained *streptococcus viridans* were found in three instances, and, in one instance (believed to be a hemolytic streptococci septicemia) the blood culture was lost.

No patient recovered in whose blood was found long-chained hemolytic streptococci. Two patients out of five whose blood cultures revealed a short-chained *streptococcus viridans* recovered.

There is a debatable question as to the value and safety of ex-sanguination transfusion. In hemolytic streptococcic septicemia the invading organisms are not only in the blood but attached to infected thrombi, on ulcerated heart valves, in the lymphatics, in intracellular spaces, in peti- cheal hemorrhagic areas, etc., so that, if it were possible to remove not only a portion but all of the patient's blood and transfuse new blood from several compatible donors, the numerous showers of streptococci would again enter the patient's blood stream as before.

The transfusion of whole blood after the intravenous administration of mercurochrome or other bacteriostatic or bacteriotoxic substances will be more efficacious in that the large number of healthy leucocytes, suddenly introduced into the recipient's blood stream, are more liable to

successfully attack the streptococci previously made less virulent by the bacteriostatic substances.

SUMMARY

The cases of hemolytic streptococcic septicemia, in the series here reported, did not respond favorably to whole blood transfusion when such transfusions were used alone or in conjunction with other treatment directed to aid the body defenses or to directly destroy the streptococci in vivo. The mortality rate in instances where long-chained hemolytic streptococci were revealed by blood culture was 100%, while the mortality rate where short-chained streptococci were found in the blood was 60%.

Transfusion of whole unmodified blood nevertheless should be performed very early in the course of the disease in conjunction with other measures directed to the rendering the invading organisms less virulent and more susceptible to the phagocytic action of the freshly introduced leucocytes and the opsonic power of the plasma of the donor's blood.

55 E. Washington St.

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TABLE 1. SUMMARY OF TWELVE CASES OF SEPTICAEMIA TREATED BY BLOOD TRANSFUSION

Case No.	Transfusion No.	Diagnosis	Blood Culture	Tranfusion	Result	
1.	R. S. 156	Streptococcic Septicemia of unknown origin	Long-chain hemolytic streptococci	750 c.c. (2)	Died	
2.	T. 34	Malignant endocarditis	Long-chain hemolytic streptococci	750 c.c.	Died	
3.	E. 60	Malignant endocarditis and secondary anemia	Long-chain hemolytic streptococci	200 c.c.	Died	
4.	B. 72	Post-operative septicemia	Long-chain hemolytic streptococci	750 c.c.	Died	
5.	Dr. D. 73	Purpura Hemorrhagica	Streptococci viridans	200 c.c.	Died	
6.	S. 85	Malignant endocarditis and secondary anemia	Streptococci viridans	500 c.c.	Died	
7.	B. 97	Endocarditis and secondary anemia	Blood culture lost	800 c.c.	Died	
8.	K.122	Septicemia following abortion	Hemolytic streptococci	750 c.c.	Died	
9.	A. 133	Endocarditis and secondary anemia	Short-chain streptococci viridans	750 c.c. (2)	Recovered	
10.	K. 137	Septicemia, endocarditis and secondary anemia	Short-chain streptococci viridans	700 c.c.	Recovered	
11.	K. 37	Diffuse Pelvic Peritonitis following suppurative salpingitis	Short-chain streptococci viridans	700 c.c.	Died	
12.	Dr. V. P. 180	Pelvic abscess (Retro-peritoneal) of undetermined origin	Hemolytic streptococci	750 c.c.	Died	
			Number	Recovered	Died	
			Hemolytic Streptococci	6	0	6
			Streptococci Viridans	5	2	3
			Questionable	1	0	1

A BRIEF REPORT OF THE ANNUAL CON-
VENTION OF THE WOMAN'S AUX-
ILIARY OF THE AMERICAN MED-
ICAL ASSOCIATION

MRS. JOHN R. NEAL

President Women's Auxiliary, Illinois State Medical Society
SPRINGFIELD, ILL.

As an adjective the word auxiliary means, helping, aiding, assisting, and as a noun it is a helper, an assistant, a confederate.

With this definition which I have just quoted, and with the admonition that we should never for one moment forget that we are an auxiliary to the Medical profession, our National President, Mrs. Allen H. Bunce of Atlanta, Georgia, gave her report to the 7th Annual session of the Woman's Auxiliary in Portland, Oregon, July 9, 1929.

Of the 192 Auxiliary Members registered at this meeting, Mrs. Mundt, Mrs. Freeman and I were privileged to represent the Auxiliary of Illinois.

The usual instructive and interesting reports of the following committees were discussed and adopted, Health Education, Hygeia, Public Relations, Finance, Health Films, and last but far from least, the report of the committee on Revision of the By-Laws.

As many of you know, your own Mrs. Morris Fishbein, member of the National Board, and her committee, are responsible for the splendid By-Laws the National organization is now governed by, and Chicago should be justly proud of the able, tedious and very efficient work that Mrs. Fishbein has done in preparing the By-Laws which are essential for the proper management of the National organization, simple in construction, yet comprehensive enough to be correctly interpreted by every member of the Auxiliary.

However, in adopting the By-Laws considerable discussion arose over the question of the Auxiliary combining its organization with, and becoming an integral part of the Federated Woman's Clubs, Parent Teachers' organization, etc.

Several states in the south, notably Texas, had resorted to such combinations and reported their satisfaction with the scheme. Other delegates thought that this was a dangerous precedent and that the Auxiliary would soon find that it would

lose its identity, and would become subservient to other organizations which would have a numerically larger membership.

Article VI, section I of our By-Laws reads "The Woman's Auxiliary to the American Medical Association should not affiliate with other organizations, nor provide for representation on its Board of Directors, of representatives of other organizations, nor be itself officially represented on the board of other organizations."

Thereupon Mrs. Bunce appointed a special committee to confer with the advisory committee of the American Medical Association, for its opinion before definite action was taken, regarding the matter.

Later in the day the special committee reported, that in its opinion the articles of the By-Laws under discussion should be adopted as written, but in view of the desire not to interfere with State's rights, Texas was permitted to continue, but the committee asked that other states give careful consideration to this important matter before adopting a similar procedure, thereby probably avoiding some entangling alliances. This ruling permitted Texas to continue to function under its state By-Laws, as it had previously done, and the threatened recession of the south was averted.

We were honored by a visit and brief address from Dr. Upham, chairman of the advisory council from the American Medical Association to the National Auxiliary. He offered his felicitations to the ladies and gave a brief talk on the place of doctors' wives in the field of medicine.

Our very good friend, Dr. E. H. Carey of Texas, in his jovial way admonished us not to forget that every member of the Auxiliary should be deeply grateful to him for presenting the request before the House of Delegates in 1922 making the organization of the Auxiliary possible.

Dr. William S. Thayer of Baltimore, the retiring President of the American Medical Association, brought sincere greetings for the welfare of the Auxiliary and suggested a continuation of the principles that had already been outlined by our organization.

We were honored by a brief talk by Illinois' own, Dr. M. L. Harris, the incoming President of the American Medical Association. He emphasized that education is the one thing that peo-

ple need more than anything else. Education along the lines of health, how to maintain it and how to recover it when lost. He pointed out some of the advantages in properly educating the young. He appealed to the women to conduct such programs of education as would help eliminate the greatest obstacles in Health Programs, namely prejudice, superstition and mysticism, all of which are mere products of ignorance. By educating the general public, the Auxiliary would render the greatest service to the Medical Profession in its efforts to improve the good health of the people.

The Chairman on Resolutions presented the question of erecting a "Jane Todd Crawford" memorial. Now, as many of you already know, Jane Todd Crawford was the Pioneer Heroine of surgery, and to her, womanhood today owes an inestimable debt of gratitude. In a small, poorly heated room, lying on a long wooden table covered only with a folded blanket, fully dressed, and without the aid of an anesthetic, Jane Crawford in cooperation with Dr. Ephram McDowell, father of Ovariectomy, prepared the way for abdominal surgery, which has in these modern times become a relatively simple, safe and not unusual procedure. The women of Kentucky are presenting the request to the various state organizations that a memorial suitable to this brave pioneer woman be erected. This is one of the things to come up in the May meeting so it would be well to look into it more fully that your delegates be better instructed, if you are interested.

Mrs. G. Henry Mundt, who is chairman of the finance committee of the National Auxiliary and past President of the Illinois Auxiliary, gave, in her very able manner, a most excellent paper on the Economic side of Medicine.

We have in Vienna, Austria, an Auxiliary from which Mrs. Frank Cregor of Indianapolis, first vice-president of the National Auxiliary, read a most interesting report. It is mostly social because of the constantly changing membership, and American Doctors' wives are eligible whether there for a couple of weeks or several years. It would be quite fitting for the wives of Physicians who are visiting or studying abroad to inquire as to whether there is an Auxiliary in the particular Medical center in which their husbands are studying, and of course it

would be a mark of respect to visit such an organization if at all possible. There is a large American Hospital in Paris and if an Auxiliary were formed there it would be invaluable to doctors' wives, in helping them to see and do the things in and around Paris.

Now my entire idea in attending the Portland meeting and in meeting many women over the states in the past year, was to gather background, to assist me in planning and carrying on the work of this very valuable organization. Valuable, providing we first educate ourselves so that we are capable of intelligently acting as a medium between the medical profession and our many and various types of clubs. Here lies the problem for each branch and County Auxiliary, namely the selection of the phase of Education that embodies its most urgent needs. Obviously they are very different and the National Body and state auxiliary can advise and cooperate but they can not direct. Some of us have assisted in the early organization work of the Women's Club, while many more remember the mistakes and disappointments incurred in the early years of the Parent Teacher Associations.

It was because of cooperation and tolerance that these two splendid organizations are today doing many outstanding things, so I am very sure that if we, as an Auxiliary, will be patient, willing to listen and learn and not too eager to do big things before we are ready, we will in a few years be an indispensable asset to the profession which we all hold so near and dear.

CORRECTION OF COMPRESSED FRACTURES OF VERTEBRAE

John Dunlop and Carl H. Parker, Pasadena, Calif. (*Journal A. M. A.*, Jan. 11, 1930), assert that compressed impacted fractures of the vertebral bodies can be reduced with restoration of the normal form of the vertebral body; also that these healed bodies maintain their shape when the patient goes about his normal activities. The reduction of these fractures is accomplished by forcible hyperextension of the back, while strong traction and counter traction are applied to the body. The traction is obtained by two men pulling upward on sheets which are passed diagonally across the chest and under the arm of the opposite side; the counter traction is furnished by two men pulling downward on the ankles. The frequency of compression fractures in industrial accidents makes this injury of great importance to industrial surgeons. In the past the injured man has received compensation over a long period, and in addition has been given a permanent

disability rating. The success of the manipulation in the uncomplicated cases of compression fracture depends on intact articular facets, the strong anterior longitudinal ligament, and the firm attachment of the intervertebral disks to the bodies of the vertebrae. In the authors' series, the best reductions have been accomplished when the injury was below the ninth dorsal vertebra. Only partial reductions have been obtained in the midthoracic region.

Society Proceedings

ADAMS COUNTY

The annual social meeting of the society was held at the Quincy Country Club January 14 and was preceded by a dinner beginning at 6:45 P. M.

After dinner the President, Doctor J. F. Ross, introduced the speaker of the evening, Attorney Frank Dick, who gave an interesting paper on "Medical Jurisprudence."

Following Mr. Dick's address, quite a number of the members asked him questions concerning legal problems in the practice of medicine. This part of the meeting was followed by a two-reel motion picture, entitled, "How Biological Products Are Made." This was put on by the courtesy of Parke-Davis and Company of Detroit.

Following this quite a few of the members remained to participate in cards.

HAROLD SWANBERG, M. D.,
Secretary.

ALEXANDER COUNTY

The Alexander County Medical Society held a very interesting and profitable meeting at the Halliday hotel, Cairo, January 24.

The case of cleidocranial dysostosis, presented by Dr. Hutcheson, proved very interesting, because of the rarity of the disease, there being only a few such cases on record. Dr. Miller also presented an instructive case on meningitis in a child with a chronic discharging ear. Following a discussion of the cases, Dr. Hutcheson presented a splendid paper on "Uterine Hemorrhage" for the edification of the members and visitors.

The president, Dr. Phil McNemer, appointed the following members to the committee on public health and legislation: Dr. Dickerson, chairman; Dr. Johnson and Dr. Davis. This is the only standing committee of the society. Steps were taken looking towards the organization of the local and the Pulaski county societies into a joint society to be known as the Alexander-Pulaski County Medical Society, the organization to be perfected for the year 1931.

Dr. Bondurant will present a paper at the February meeting on "Injuries." In this he will cover fractures of the skull. The doctor's well known ability and the timeliness of the subject in these days of hard streets and roads and careless drivers is expected to assure a worthwhile meeting.

J. W. DUNN, M. D.
Secretary.

COOK COUNTY

Chicago Medical Society Joint Meeting with Chicago Society of Industrial Medicine and Surgery

January 8

Program

Fractures of the Acetabulum, W. R. Cubbins.

Discussion: E. W. Ryerson and A. H. Conley.

Analysis of Anxiety States, Dr. Fritz Wittels-Vienna.

Discussion: R. C. Hammill and G. W. Hall.

Regular Meeting, January 15

Fundamental Americanism, Prof. George W. Dyer, Department of Economics, Vanderbilt University, Nashville, Tenn.

Regular Meeting, January 22

The Clinical Relations of Achlorhydria, Dr. James S. McLester, Birmingham, Ala.

Discussion: L. D. Snorf, A. A. Goldsmith, Donald Abbott.

Joint Meeting with Chicago Tuberculosis Society, January 29

Resistance in Tuberculosis, William F. Petersen.

Some Important Phases in the Differential Diagnosis, Pathology and Treatment of Surgical Tuberculosis, Philip H. Kreuscher.

Discussion: Fremont A. Chandler.

Treatment of Tuberculosis by Heliotherapy with moving pictures, A. M. Forster, Colorado Springs, Colo.

Marriages

J. HAROLD HOPKINS, Walnut, Ill., to Miss Myrtle Marks of Dow City, Iowa, in Omaha, Dec. 27, 1929.

CLARENCE LEON WILSON to Miss Ernestine Grace Fleming, both of Chicago, Dec. 31, 1929.

Personals

Dr. A. C. Baxter of Springfield was appointed assistant director of the department of public health by Gov. Emmerson, January 30, to succeed Dr. Thomas H. Leonard, who resigned recently to enter the health service of California.

Dr. Harry W. Waterous of Galva is retiring from practice after 37 years' practice and will sail for Manila this month, where he will be associated with his son, Dr. Willard Waterous. Dr. Ben W. Kinsey of Victoria will continue the Galva practice.

The home of Dr. and Mrs. Christian H. Diehl, Effingham, is reported to have been destroyed by fire, Dec. 19, 1929. Dr. Diehl is secretary of Effingham County Medical Society.

Dr. Isadore Pilot addressed the Rock Island County Medical Society, January 14, on "Bronchial Asthma-Allergy and Its Relations to Asthma."

The Vermilion County Medical Society was addressed at Danville, January 7, by Dr. Henry Schmitz, Chicago, on "Diagnosis and Treatment of Cancer."

Dr. George Hoffman, after about twelve years' service as physician at the prison at Chester, has resigned, effective January 1, to devote his time to private practice.

Dr. Andy Hall, state health officer, Springfield, addressed the Jefferson-Hamilton County Medical Society, Mount Vernon, January 17, on some health problems in Illinois.

Dr. Joseph K. Calvin, Chicago, gave an illustrated lecture on "Nephritis in Children" before the Livingston County Medical Society, Pontiac, Dec. 19, 1929.

Dr. Carl E. Black, Jacksonville, was elected president of the Western Surgical Association for the ensuing year at the recent meeting in Del Monte, Calif.

Dr. Benjamin Goldberg, Medical Director of the City of Chicago Municipal Tuberculosis Sanitarium and Asst. Professor University of Illinois College of Medicine, will give the annual address at the meeting of the Boston Tuberculosis Association on the afternoon of Monday, February 3, 1930. His subject will be "Present Needs in Tuberculosis Control." In the evening Dr. Goldberg will address the Trudeau Society of Boston on "The Medical Aspects of Phrenic Surgery."

On January 9, 1930, Dr. Geza de Takats presented a paper before the Evanston Branch of the Chicago Medical Society, "The Surgery of Diabetic Patients."

On January 3, 1930, Dr. R. W. McNealy and Dr. M. E. Lichenstein addressed the Chicago Surgical Society on "Muscular Relaxation Produced by Novocain in Tendon Repair."

On January 7, 1930, Dr. W. A. Newman Dorland presented the Canti Cancer Film to the Peoria County Medical Society, prefacing his remarks with interesting statistics regarding cancer and its prevalence in the United States. The attendance numbered 220 and the meeting

was held in the auditorium of the Peoria Women's Club.

On Jan. 21 Dr. Walter M. Boothby, Director of the Metabolism Laboratory at the Mayo Clinic addressed the Peoria County Medical Society on "Oxygen Therapy." He gave the main points in the administration of oxygen in post operative pneumonias. His talk was illustrated with lantern slides. Approximately 100 members were in attendance.

Dr. Jean V. Cooke, department of pediatrics, Washington University School of Medicine, St. Louis, addressed the McLean County Medical Society, Bloomington, January 14, on "Specific Prophylaxis and Treatment of Infectious Diseases."

The Christian County Medical Society and physicians of central Illinois were addressed January 15, at Taylorville, by Dr. Quitman U. Newell, St. Louis, on treatment of cancer of the uterus.

News Notes

—The Chicago Council of Medical Women was addressed at the Medical and Dental Arts Club, February 7, by Drs. Helen V. McLean and Barbara M. Nickey on "Obstetrics in China" and "Public Health Work in India," respectively.

At the meeting on March 7, Dr. Lucille R. Grant will discuss "Pollen Disease" (Hay Fever) and Dr. Ruth Tunnicliffe will present the subject, "Measles."

—The sixth Ludvig Hektoen Lecture of the Billings Foundation was delivered before the Institute of Medicine of Chicago, January 24, by Dr. Albert V. Hardy, director, state hygienic laboratories, State University of Iowa College of Medicine, Iowa City, on "Undulant Fever."

—The Chicago Neurological Society was addressed, January 16, by Dr. Lewis J. Pollock on "An Abnormal Abdominal Reflex Producing Crossed Flexion of the Upper Extremity;" Dr. Ernest Sachs, St. Louis, "Review of Forty-five Frontal Lobe Lesions" and Dr. Fritz Wittels, Vienna, Austria, "Psychoanalysis in Relation to Psychiatry."

—Although official figures are not yet complete, the birth rate for Chicago declined 1.6 per cent in 1929 as against that for 1928. The

birth rate per thousand of population was 18.7 in 1928; the nearly complete figures show that it will be 18.4 for 1929. The reasons advanced to account for the declining birth rate were restricted immigration, spread of birth control information and changes in the standard of living.

—The Chicago Dental Society held its annual congress at the Stevens Hotel, January 13-15. A symposium on avitaminoses was presented by Dr. Simeon B. Wolbach, Shattuck professor of pathology and anatomy, Harvard University Medical School; Dr. Edward H. Hatton, professor of pathology, Northwestern University Dental College, and Milton T. Hanke, Ph.D., professor of pathology, University of Chicago.

—At the annual meeting of the Elmhurst Hospital staff at Elmhurst, Ill., the following officers were elected: President of staff, J. H. Raach, Wheaton; vice-president, H. F. Langhorst, Elmhurst; secretary-treasurer, J. W. Reiss, Lombard. The president appointed executive committee: E. H. Oelke, Wheaton, chairman; H. F. Langhorst, Elmhurst, and Allis S. Watson, Glen Ellyn.

—Judge Hopkins of the criminal court refused a new trial, January 5, to W. H. H. Miller, former head of the state department of education and registration. In the same court, Dec. 10, 1929, Miller was found guilty of conspiracy to sell medical and dental licenses to persons not licensed to practice and was sentenced to seven months and one day in the county jail and fined \$2,000. Miller's attorney was given a limited period in which to file an appeal.

—Of the specimens examined by the laboratory of the state department of health in 1929, 88,939, or 68 per cent., were submitted for tests relating to syphilis and gonorrhea, and nearly 21 per cent. were found to be positive. In the search for tubercle bacilli, more than 14,000 tests were made and nearly 16 per cent. proved positive; 8,663 tests were made for the discovery of typhoid bacilli; only 968 cases of typhoid, however, occurred in the state. The tests are done by the state free of charge.

—Dr. Herman M. Adler, state criminologist and director of the Juvenile Psychopathic Institute, has accepted a professorship of psychiatry at the University of California, Berkeley, and an

appointment as consultant to the California State Department of Institutions. Dr. Adler, who was assistant professor of psychiatry at Harvard University Medical School, came to Chicago in 1916 to study the facilities in Cook County for the detection and care of mental diseases, under the auspices of the Rockefeller Foundation and National Committee for Mental Hygiene. Dr. Adler's assistant for several years, Dr. Paul L. Schroeder, has been designated by the governor to succeed him.

—At the annual meeting of the Chicago Heart Association, January 14, heart disease as a cause of death in Chicago was said to have increased more than 21 per cent in the last ten years. During 1929 there were 1,300 deaths due to heart disease and 1,208 cases treated at seventeen dispensaries in Chicago: the total of cases included 2,284 children. Among the speakers at the meeting were Dr. Irving S. Cutter, dean of the Northwestern University Medical School, and Dr. Morris Fishbein was elected one of the governors of the association. Dr. Walter W. Hamburger presided. It was announced that ground will be broken for the La Rabida Sanatorium in Jackson Park, June 1. This will be a 175-bed hospital for convalescent children.

Deaths

MARTHA ANDERSON, Quincy, Ill.; Northwestern University Woman's Medical School, Chicago, 1898; a Fellow A. M. A.; formerly medical director of the Adams County Tuberculosis Sanatorium, Quincy; aged 58; died in December, 1929, at Roberts, of subphrenic abscess following resection of the pylorus.

JAMES W. ARMSTRONG, Centralia, Ill.; Medical College of Indiana, Indianapolis, 1885; formerly president of Southern Illinois Medical Society and city health officer of Centralia; aged 73; died, December 19, of cerebral hemorrhage.

JAMES MONROE BAKER, Decatur, Ill.; Eclectic Medical College, Cincinnati, 1892; aged 64; died suddenly, December 21, 1929, of chronic myocarditis.

HERMAN THEODORE BECHTOLD, O'Fallon, Ill.; Missouri Medical College, St. Louis, 1880; aged 75; died, Dec. 17, 1929, of heart disease.

WILLIAM BLANCHARD, Chicago; National Medical University, Chicago, 1905; aged 60; died in Cook County Hospital, January 11, of chronic morphinism and septicemia.

WALTER TEED BRONSON, Chicago; Northwestern University Medical School, Chicago, 1910; a Fellow A. M.

A.; secretary of the Radiological Society of North America; director of the roentgen-ray laboratories at his alma mater; served during the World War; roentgenologist to the Englewood Hospital; aged 42; died, Dec. 26, 1929, at the Edward Hines, Jr., Hospital, Maywood.

AUBREY J. ENLOW, Liberty, Ill.; Missouri Medical College, 1899; aged 51; died, December 20, 1929, of an overdose of aconite taken with probable suicidal intent.

EDGAR ELLIS FYKE, Centralia, Ill.; St. Louis College of Physicians and Surgeons, 1889; a successful coal mine operator for past 20 years; in U. S. Medical Corps during the World War; a bank director; resident of high school board; active in politics and Masonry; aged 61; died, December 31, 1929, in a hospital at San Antonio, Tex., from meningitis following mastoiditis.

EDWIN J. GARDINER, Evanston, Ill.; University of Madrid, 1878; a member of Evanston branch, Chicago Medical Society; aged 73; died January 9, of arteriosclerosis.

ROLLEN WILBUR HARROD, Avon, Ill.; Northwestern University Medical School, 1904; University and Bellevue Hospital Medical College, 1904; a veteran of U. S. Army Medical Corps in the World War; former mayor of Avon; active in the Masonic order; aged 53; died, December 30, 1929, of rheumatic endocarditis.

ROLAND HAZEN, Paris, Ill.; University of Pennsylvania School of Medicine, 1901; a member of Illinois State Medical Society; founder of the Paris hospital; aged 53; died, January 14, of a self-inflicted bullet wound.

HERMAN S. HERZFELD, Chicago; University of Varonezh, Russia, 1896; aged 58; died, Nov. 8, 1929, at Mount Sinai Hospital, of heart disease and chronic nephritis.

JOHN McCLELLAN KLINCK, Chicago; Barnes Medical College, St. Louis, 1905; a Fellow A. M. A.; aged 58; died, Oct. 27, 1929, in Los Angeles.

ROYDEN ARTHUR LAING, Ellsworth, Ill.; Chicago College of Medicine and Surgery, 1917; a member of Illinois State Medical Society; aged 40; died, January 3, in St. Joseph hospital, from injuries received when his automobile ran into a culvert.

MARIA LEVIN LIPKIN, Chicago; Charkovsky Universitet, Kharkov, Russia, 1916; aged 35; died, Dec. 5, 1929, at the Illinois Research and Educational Hospital, of acute yellow atrophy of the liver.

ROBERT CLINTON MILLER, Freeport, Ill.; College of Physicians and Surgeons, Chicago, 1887; a Fellow A. M. A.; aged 62; died, Dec. 6, 1929, of diabetes mellitus.

DR. JOHN M. MURRAY, Joliet, Ill.; University of Glasgow, 1976; aged 81; died, December 19, 1929, in St. Joseph hospital.

PAUL REXFORD NEAL, Chicago; Rush Medical College, Chicago, 1917; a Fellow A. M. A.; member of the Kansas Medical Society; aged 37; died, Nov. 12, 1929, at the Augustana hospital, of heart disease.

JOHN W. O'HAYER, Danville, Ill.; Cincinnati College of Medicine and Surgery, 1882; member of the Illinois State Medical Society; aged 80; died, Dec. 27, 1929, at the Lakeview hospital, of pneumonia.

JOSEPH SHELTON POINDEXTER, Jacksonville, Ill.; College of Physicians and Surgeons, Keokuk, 1880; aged 82; died, Nov. 25, 1929, at Girard, of pericarditis and arteriosclerosis.

CHARLES G. RAYHILL, Belleville, Ill.; St. Louis Medical College, 1882; member of the Illinois State Medical Society; aged 71; died, Dec. 30, 1929, of myocarditis.

JAMES H. SQUIRE, Carrollton, Ill.; Homeopathic Medical College of Missouri, 1889; one of the oldest members of Illinois State Medical Society, aged 86; died, December 18, at his home.

EDWIN F. STANNUS, Quincy, Ill.; Keokuk Medical College, College of Physicians and Surgeons, 1905; after several years' practice in New York City he had returned recently to Quincy and installed elaborate equipment for practice; aged 48; died suddenly, January 1, of acute dilatation of the heart.

GEORGE L. THOMPSON, Mount Sterling, Ill.; Keokuk (Iowa) Medical College, 1896; member of the Illinois State Medical Society; aged 80; died in November, 1929, of acute dilatation of the heart.

WARD C. TUNISON, White Hall, Ill.; Cincinnati College of Medicine and Surgery, 1895; member of the Illinois State Medical Society; aged 60; died, Dec. 20, 1929, at St. John's Hospital, Springfield, of myocarditis and cholecystitis.

JOHN W. VAN WINKLE, Chicago; Medical Department of the University of the City of New York, 1878; a Fellow A. M. A.; aged 79; died, January 1, of bronchopneumonia.

WILLIAM SEYMOUR WHITE, Evanston, Ill.; Chicago Homeopathic Medical College, 1888; a Fellow A. M. A.; veteran of the Spanish-American War; aged 65; died, Nov. 26, 1929, of heart disease.

GEORGE W. WHITFIELD, Chicago; Northwestern University Medical School, 1887; former chief surgeon for People's Gas Light and Coke Company; aged 69; died, December 30, 1929, of cerebral arteriosclerosis and diverticulitis of the bladder.

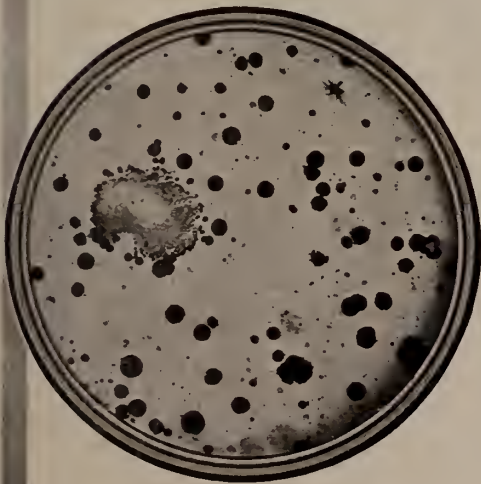
PAUL WILLIAM WIPPERMAN, New Orleans, La.; University of Minnesota Medical School, Minneapolis, 1913; a practitioner of Decatur, Ill., and superintendent of Decatur and Macon County hospital from 1923 to 1928, and of Truro Infirmary since; aged 41; died, January 2, of acute endocarditis in the latter institution.

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Personals

A FEDERAL NARCOTIC DICTATOR NOT NECESSARY—BUREAUCRATIC CONTROL OF MEDICINE WILL PROVE A CALAMITY

There are two narcotic bills before the House of Representatives in Washington, known as House Bills H. R. 9053 and H. R. 9054. (Porter Bills.)

The United States has no need of additional prohibitive narcotic drug legislation. There is ample statutory enactment to prevent any illegitimate infringement upon the necessary and legitimate dispensation of narcotic drugs. Elsewhere in this issue are cited authoritative figures proving that drug addiction is less prevalent than the lay mind is being told through biased and untruthful as well as unscientific propaganda.

The Committee on the Cost of Medical Care and other narcotic research authorities state that the drug addicts in the United States approximate a total of 100,000 persons (less than one per cent. of the total population). Also that doctors, druggists dentists and veterinarians play absolutely no part in the spread of drug addiction.

In fact, drug addiction is an underworld proposition. In supervision, regulation and possible abolition of the underworld traffic in drugs lies the solution of the problem, and the prophylactic kernel of the whole proposition.

From which it is plain to be seen that if any narcotic drug laws are needed these should be aimed at the underworld and not at a scientific body of citizens such as doctors, druggists, dentists and veterinarians. The purposed Porter bills would seem to be aimed directly at the medical and allied professions. As a matter of fact the narcotic drug legislation now on the statute books more than covers the proper distribution of narcotic drugs, but what this legisla-

tion needs is enforcement. Not more enactment but far more enforcement of what has been enacted is the crying need of the hour.

The supply of narcotic drugs used to satisfy addiction is smuggled into the country in direct violation of the laws now on statute books. To apprehend these violators of the law rather than to make new laws to hamper the medical profession in its labors for sick and ailing humanity would seem to be the indications of wisdom.

There is no need of further restriction on the legitimate use and distribution of narcotic drugs for necessary and proper medical purposes. The Harrison Narcotic act and the federal narcotics control board established by the Narcotic Drugs Import and Export Act attends to that even more extensively than is needed. Yet Congressman Porter's two bills, respectively H. R. 9053 and 9054, will remodel the Harrison Narcotic act and abolish the federal narcotics control board, as well as add still another "bureau" to the already large and ever increasing army of "bureaus" at that growing seat of centralization, Washington, D. C. Further the Porter bill, or bills, will have at the head of this bureau with its sole authority to determine who shall or who shall not be permitted to prescribe and dispense narcotics for medical purposes, a "commissioner of narcotics," whose powers will be czaristic in the extreme.

For among other capacities this "Commissioner" will be empowered to

1. Fix an arbitrary limit to the amount of narcotic drugs that may be produced or imported within a calendar year, thus automatically abolishing the now authorized federal narcotics control board with representatives from three distinct and separate departments of the federal government.

2. Wield autocratic power in issuing withholding or revoking licenses previously issued; a most absolute dictum since the bill provides also that no license for the importation or manufacture of any narcotic drugs shall be issued, or if issued such license may be suspended or revoked if the commissioner finds that such license is not necessary to supply the medical and scientific needs of the United States.

3. Act without explanation of his reasons. The commissioner according to the bill, with respect

to the issuance, suspension or revocation of a license need merely give written notice to the applicant or licensee to show cause why the license should be issued; or in case a license has been issued, why such license should not be revoked. By this reversal of procedure the bill, through its commissioner, lays the burden of proof for fitness upon the applicant or licensee. In case of a producer or importer proof must be furnished that the drugs being manufactured or imported are actually and immediately needed. And upon the caprice of the man who may be serving temporarily in the office of commissioner of this new bureau, any and all such licenses may be issued, withheld, suspended, or revoked.

4. Hearings before the commissioner or his delegated agent and witnesses who may testify at these hearings are an arbitrary matter within the hands of the commissioner or his delegated agent as to time, place, witnesses and other details without any regard to the rights or convenience of the applicant or licensee.

5. No provision is made for the right of appeal from the commissioner's decision other than the right of any aggrieved citizen for appeal known as his civil constitutional right and which is patently and admittedly an expensive and long delayed method of disputation when involved with an official of the government. In fact, in the minds of the average citizen, a hopeless if not a lost cause.

6. Any officer or employe of the commissioner may be assigned to hold hearings; determine whether these shall be public or private and issue subpoenas for the production of witnesses, books, papers, and documents. The applicant and licensee cannot have a witness unless the commissioner knows why and what the witness will testify.

7. No matter who conducts the hearing, evidence may be passed upon by the Commissioner alone and on this forwarded transcript of testimony and the documentary evidence, sight unseen and all unheard, the Commissioner makes the final decision. No provision is made for suspending the operation of the commissioner's decision, pending a decision by the court on any appeal made against the decision of the commissioner.

The Porter bill makes no provision for the en-

enforcement of the Harrison Narcotic Bill, an enforcement which, as is previously stated, if it were adequate would practically wipe out the narcotic drug problem. Unfortunately most propagandists and proposers of theoretic legislation prefer to make laws that are to be inflicted upon the law-abiding rather than the law-breaking classes. and their demands for "reform" legislation are based primarily on appeals to the emotions rather than on appeals to common sense and hard boiled facts. Some very sensational newspapers are flooding their columns with harrowing tales of the ruins resulting from drug addiction.

There are few things under the heaven and on the earth more pitiable than a fine brain and a fine body gripped by the perniciousness of the drug habit. But drug addicts in the United States, or anywhere else, are not made in doctor's offices nor through the channels of legitimate practice. There is no disputation as to the value of narcotic drugs both in the prolonging of life and the palliation of pain, and when handled under scientific conditions no ill results. That the discretionary power of administering these drugs should be taken out of the hands of science and put into the hands of politics and ignorance is unthinkable. What is needed is less brass band and more pick and shovel. If the emotionalists who want to practice medicine by bossing medical practitioners through laws and laws and more laws, would stop making a cry for more legislation and devote their talents to a demand for more enforcement the truth might have a chance to work for the good of the public weal.

Unfortunately making a law does not enforce a law, any more than setting out eggs, flour, fat, sugar, milk, and baking powder on a table compounds a cake for supper.

Again, the Porter bills give the newly proposed commissioner all the rights in the world and hamper him with practically no restrictions. He is not hampered in any way by any previous law governing any state in which he may care to set about his czaristic way. The issuing, suspension and revocation of licenses is a plaything for his hands alone. State rights, state police powers, state welfare, state medical boards are but a puff of thistle-down before the commissioner's ideas, as to what makes an addict and what to do to

him and with whom to do it. And meanwhile physicians, pharmacists, dentists and veterinarians must keep right on also paying taxes and making registrations with the Commissioner of Internal Revenue for the obligations of the Harrison Narcotic act.

From the powers vested in the commissioner of the new Porter bill it would seem to be rather difficult to find a man so omnipotent as to be able capably to administer the tasks assigned.

Now there are only two limitations to these powers of the commissioner. His authority is subject only to the right of the Secretary of the Treasury to approve or disapprove such regulations as the commissioner may propose, and to the right of the courts to review final action by the commissioner.

A narcotic addict can not be licensed, and it lies within the jurisdiction of the Commissioner as to when a person becomes a narcotic addict, when he is one, and when he ceases to be one!

Further, once a license is revoked, it must stay revoked. **AND NEVER THEREAFTER CAN A MAN WHOSE LICENSE HAS BEEN REVOKED USE NARCOTIC DRUGS PROFESSIONALLY AS NO NEW LICENSE CAN BE ISSUED!**

Remember this revocation lies at the discretion of the commissioner. And no matter how trivial an offense against a state or federal law dealing with narcotic drugs, may be laid up against a man, if he is convicted or has been convicted of it, he can never be licensed and if he has a license it can be revoked.

Under the Porter bills this commissioner would be a one-man version of the cheka without any thought of the rights of the sick and ailing among the 120,000,000 residents of the United States.

H. R. 9053 (PORTER BILL) IS BEFORE THE WAYS AND MEANS COMMITTEE OF THE HOUSE OF REPRESENTATIVES. MEMBERS OF THE COMMITTEE FROM ILLINOIS ARE CARL R. CHINDBLOM AND HENRY T. RAINEY.

H. R. 9054 (PORTER BILL) IS BEFORE THE COMMITTEE ON FOREIGN AFFAIRS. THE MEMBER OF THE COMMITTEE FROM ILLINOIS IS MORTON D. HULL.

Doctors should write the members mentioned

protesting against the passage of the Porter Bill. Send your communication directly to the members at Washington, D. C., care of House of Representatives.

MEDICAL PROFESSION NOT RESPONSIBLE FOR DRUG ADDICTION

The Porter Bills (H. R. 9053 and 9054) are before Congress. Further regulations on the narcotic problem so far as the medical and allied professions are concerned are unnecessary and uncalled for.

To make the medical profession the national scapegoat seems to be the current favorite indoor sport. Every ill from the alleged operating for fees instead of for ailments to the manufacturer of drug addicts is placed without rhyme or reason at the door of the medical profession. Such false and unjustified slander against the body of self-sacrificing, underpaid professional men should be stopped.

Both in and out of season the editor of the ILLINOIS MEDICAL JOURNAL has published editorial after editorial in defense of the medical profession. Relative to the part played by the doctors in the causation of drug addiction see ILLINOIS MEDICAL JOURNAL, April, 1927.

This editorial was prompted by a statement of a Judge of the United States Federal Court of Illinois before the Taylorville Rotary Club where he stated, that "2,500,000 addicts in the United States were made by the practice of medicine." The impression is quite universal among the laity that there are millions of addicts in the United States made by the practice of medicine.

The number of addicts in the United States are comparatively few, as evidenced by the following statistics. The committee on the cost of medical care has completed two years of its five year program of investigation and has issued a summary of the work accomplished. In one of the interesting pamphlets just published they set forth their findings on addiction as follows:

"There are in the United States about 110,000 drug addicts" (less than one per thousand).

L. G. Nutt, chief of the narcotic division of the United States, on Dec. 11, 1926, estimated that there were 100,000 addicts in the country. As this is Chief Nutt's especial field of investigation it would seem that he would be better able to give the number of addicts in the United States than any other man. Mr.

Nutt in giving this estimate before the House Committee on Appropriations added that his "estimate was based on a survey by 300 field agents engaged in this work, who mingled with the underworld and consulted physicians and city authorities and others."

Mr. Nutt added that 98 people are employed in the anti-narcotic work at the headquarters at Washington, and the total number of employes there and in the field is 333: that last year they had brought about 5,120 convictions, with total collections from the violators of the law, including fines of \$981,739.

May 23, 1924, *Public Health Reports*, in a brochure, "The Prevalence and Trend of Drug Addiction in the United States and Factors Influencing it," quotes from surveys of the States of Tennessee and Pennsylvania and from the United States Army and the Treasury report. The maximum probability of drug addicts in any of these findings was placed at 269,000 or about ten per cent. of the statement of Judge Fitzhenry.

Mr. Nutt's estimate of course is less than one-twenty-fifth of what the Bloomington judge lays upon the country's population.

In the Tennessee survey made by Lucius P. Brosn, State Food and Drug Commissioner, as he was able to register 2,370 addicts he estimated the maximum number as not exceeding 5,000 in the state. Using these figures as a basis he estimated 215,000 in the entire country.

The treasury department survey under the secretary of the treasury, conceded the most comprehensive survey made up to that time; claims there were not over 237,655 addicts in the United States.

The Pennsylvania survey was made under the State Bureau of Drug Control. As in five years this bureau collected the names and addresses of drug addicts in Pennsylvania and obtained less than 9,000 names, the chief of the bureau estimated that there were not more than 20,000 addicts in the state; that on this basis there would be approximately 242,000 addicts in the United States.

The United States Army findings were based on a survey of all men in the draft age and found there were only 3,284 drug addicts. If the army rate is applied to the entire United States based on the 1920 census there would be approximately 99,500 addicts.

Clinical reports were made by revenue agents of the 44 clinics supervised by the internal revenue department, 34 of which contain statistical information on addiction in large cities in California, Connecticut, Georgia, Kentucky, Louisiana, New York, North Carolina, Ohio, Rhode Island, Tennessee, Texas, and West Virginia.

These clinical statistics show that there were 4,123 addicts in 34 cities having a total population of 4,182,952 or 0.98 addict per 1000 persons. At this rate there would have been in America 104,300 addicts in 1924.

New York City clinic not included in the cities in states above mentioned registered 7,464 addicts. Using the 1920 census as a basis of computation the New

York City rate would give approximately 140,000 addicts for the entire country.

Applying the New York rate to the entire country would be absurd. New York is the largest port of entry in the United States and is the clearing house for the whole world and naturally the percentage of addiction in New York far exceeds that of any other city and applying the same yard stick to New York as to other sections of the country is ridiculous.

Using the U. S. *Public Health Reports* of "May 1924" yields the maximum estimate 269,000 and a minimum estimate of 99,500 addicts in the U. S. with various estimates between these two figures.

Mr. Nutt added, "Of the hundred thousand non-medical addicts in this country, and by non-medical addicts I mean addicts that take it simply to gratify the habit, nearly all acquire their supply through bootleg channels because the doctors will not prescribe it except occasionally."

Although the usual disposition of the addict is to shift the responsibility for his affliction to others, and to justify himself for his habit, less than one per cent claim the addiction is due primarily to physicians eventuating from a necessary treatment for disease.

Let it be repeated, that according to statistics and surveys the United States government officials and health departments unite in the finding that physicians play an inconspicuous part if any in the causation of drug addiction.

MENACE OF OVERSTANDARDIZATION OF CARE OF THE SICK AND HOSPITALIZATION AND EXPLOITATION OF THE DOCTOR

There is a great deal of unrest on this topic that is prevalent in many sections. We have received much complaint. The most recent protest dealt with certain matters in a northern Illinois hospital and where because of an attempt at superstandardization there resulted an unfair discrimination as to patients. The feeling of resentment voiced in this protest appears to be universal throughout the United States. Much of this complicated situation it would seem might have been avoided, had installation of this system of standardization been effected throughout under the supervision of the A. M. A.

The sad but familiar trick of making the method of far more importance than the result is cropping up again in the tendency towards too much standardization in hospitals.

After all it is the physician who is treating the sick and it is his regime rather than the height of baseboards or the average weight of the nurses that is the great essential.

The human tendency to exploit and to exalt the part at the expense of the whole is no place more glaring than in the treatment of the sick where the standardization of hospital shows signs of being held of greater necessity than the urgencies of the patient.

In this respect no better word has been said than by Dr. M. L. Harris, president of the A. M. A.

Quoting Dr. Harris in part:

"It should be the duty of all physicians who are actively concerned with hospital work to see that the primary purpose of the hospital—namely, the care of the sick—is not diverted or minimized by the prevailing passion for so-called standardization, which seems to have obsessed so many organizations and institutions today. Hospitals are being flooded with elaborate questionnaires, some of them asking questions which no self-respecting institution would answer, such as the names and salaries paid its superintendent and other employees, and the names and particular religion of the members of the staff, and are being overrun by young inspectors who have no knowledge of, or experience in, the management of hospitals, each with an arbitrary yardstick with which to measure and rate the hospital according to the dominant idea of the institution doing the rating. One will rate the hospital on the basis of its physical equipment; another on its scientific paraphernalia; a third on the percentage of autopsies held on the dead; a fourth on the number of beds and its facilities for training interns; a fifth on the willingness of the members of the staff and all others practicing in the hospital to sign an iron-clad multiplying oath concerning fees, which it is acknowledged cannot be enforced and which, as is well known, is constantly being violated by a large percentage of its own members, and so on down the list, while no one seems to have grasped the idea of rating hospitals according to the amount of good they are doing in the relief of human suffering, having in mind the economic conditions of the community served.

Physicians must have strength of character enough to assert themselves in the management of hospitals. They must be imbued with the high ethical principles of the profession and see that all those who work with them are likewise ethical. This is a duty they owe to themselves, their profession, their patients and the public."

On this subject, quoting further, an editorial from the *Indiana State Medical Journal* for Oct., 1929, remarks in part:

OVERZEALOUS HOSPITAL STANDARDIZATION

"No doubt hospital standardization has worked to the benefit of hospitals, physicians and public, but there is such a thing as carrying a good thing too far. One of the points that must be emphasized to hospital man-

agers is the fact that the physician is responsible for the patient and if anything goes wrong it is the physician and not the hospital that first comes in for censure. Therefore the physician's judgment and his wishes, within reason, must be respected. Then if the attending physician desires to have laboratory work done for his patient who has been hospitalized he will order it. *The hospital should not go over the head of the attending physician and do a lot of laboratory work on its own initiative, always at the expense of the patient, much of which may be positively superfluous as well as useless.* To follow such a course of action may be one of the rules of hospital standardization, but it is an idiotic rule and physicians who send patients to hospitals should object emphatically. In the first place the physician should be competent and trusted or else not admitted to the hospital as an attending physician, surgeon, or specialist. In the second place, if he is trusted then he should be permitted to use his judgment as to when and how much laboratory work is to be done for *his* patient, and it can be taken for granted that he has more interest in the patient than has any hospital, and his judgment probably is better than that of the hospital management as to when laboratory work is indicated. If the hospital is doing unnecessary and superfluous laboratory work on the plea that it is for the protection of the hospital (?) then let it be known that the patient will *not* be charged for the service. There has been much complaint about the attempt on the part of the management of some hospitals to take too much charge of the patient and to do too much dictating to physicians as to the kind and amount of treatment to be given the patient. *Those hospitals should turn over a new leaf and permit the physician to do the practicing, and, on the other hand, the physician who is held responsible for the treatment and care of his patient in the hospital should be permitted to have that control and not be subjected to unfair dictation on the part of hospital managements."*

DR. CABOT DISMISSED AS MEDICAL
DEAN OF UNIVERSITY OF MICHIGAN
—A MEDICAL DEPARTMENT OF A
UNIVERSITY SHOULD NOT COM-
PETE WITH ITS OWN GRADUATES

At last one certain step at least seems to have been taken to erase from the scientific practice of medicine the deep-dyed stain upon the justice of ethics involved by the tendency of tax-supported medical educational institutions to enter into practice in direct competition with their own alumni, as well as with practicing physicians the country over.

There is an old and homely saying: "Give a calf rope enough and it will hang itself." The Old Testament voices this same sentiment with more dignity in discussing the tilt at arms be-

tween Haman and Mordecai when at last "There was Haman—on a gallows fifty cubits high"—or in modern words, "hoist by his own petard."

Now the state of Michigan is one of the forty-eight States in the Union where menacing tendency to state medicine flourishes under cover of legislative protection. To all of which it would seem that not only has a portion of the faculty of the medical school of the University of Michigan been subscribing a more or less fervent "Amen" but to tell the truth some of the members would seem to have tacitly sanctioned many such revolutionary and un-American movements that were based upon the invasion and pre-emption of individual rights of some one person or class. Among such movements must be mentioned the lay dictation of the practice of medicine or the intrusion into this practice of medicine of corporations, especially tax supported corporations.

The medical profession of the state of Michigan has at last made audible its murmured protest. Dr. Hugh Cabot is no longer dean of the medical school of the University of Michigan.

What welcome news this announcement must have been to the hard-working, earnest doctors in the state of Michigan! It has been an open secret this long time that Dr. Cabot's paternalistic ideas and theories—the policies conceived and put into operation by Dr. Cabot, have not met with popular approval of physicians in general either in or out of Michigan, nor by the very faculty of the school, of which he is a member.

This usurpation of the privileges of medical practice by a body corporate designed and instituted by that very body of taxpayers through whose labors and tithes it is supported, for the functions of teaching and research, under and post-graduate, and by an especial extension of purpose as a bureau of consultation for practicing physicians has been an outrage against ethics and justice mounting into octopus strength.

No medical school remains within its rights and jurisdiction when it encourages a clinical practice either for the purpose of whole or partial self-support. The only leeway allowable from its main or educational purpose is such clinical practice as may be indicated for the care of the indigent and as clinical material for the purpose of the teaching of the practice of medicine in

complement to the teaching of the theory of medicine. *Whoever heard of a college of law entering into paid legal practice?* What a howl and uproar would emanate from the entire judiciary from the respected Supreme Court of the United States to the cheapest "ambulance chaser" who ever sullied a sheepskin.

In this connection one can do no better than quote the dispatch sent out by the Associated Press and briefing the news of the situation, as appeared in the *Chicago Herald-Examiner* under date of Feb. 7, 1930:

DOUST CABOT AS MEDICAL DEAN

ANN ARBOR, Mich., Feb. 7.—The board of regents of the University of Michigan this afternoon relieved Dr. Hugh Cabot, dean of the medical school, of his duties as dean, but continued him as professor of surgery.

The ouster was a result of a split between Dean Cabot and members of the medical school faculty over whether doctors who were paid by the state should also be allowed to have private practices outside. Dean Cabot held that all members of the faculty should devote their entire time to teaching.

The dean also held that the University hospital should be open to private patients with fees paid to the university. Members of the faculty supported by the Michigan State Medical Society held that acceptance of patients who were able to pay for treatment by the university hospital takes practice away from the doctors of the state.

The regents first asked him to resign, which he refused to do. A committee of five will be appointed by President Ruthven to administer the affairs of the school for the present."

The support and the co-operation of its state university are the meed and due to any corps of physicians practicing in any state. Any medical alma mater should be loyal to its alumni and the alumni should be loyal to the alma mater. "Noblesse oblige," on both sides.

In any state where conditions maintain such as have beset Michigan doctors, such loyalty becomes drowned by injustice and usurpation of rights and privileges of individualism such as is nothing less than rank robbery.

It is appalling to remember how long protests of organized medicine against this procedure on the part of universities and corporations practicing medicine have been refused that democratic spirit of serious consideration expected from a public servant.

Dr. Cabot's successor must be chosen with care. He must be a man worthy of his high position as

educator and executive and blessed with the intelligence and the diplomacy to set a value upon the good will and the good opinion of the medical profession in the state of Michigan first, and, secondly, in every other state of the union.

LORD CHIEF JUSTICE OF ENGLAND DISSENTS ON GROWING MENACE OF BUREAUCRACY — HIS CRITICISM FURNISHES FOOD FOR THOUGHT TO THE AMERICAN PUBLIC, AND ESPECIALLY TO MEMBERS OF THE MEDICAL PROFESSION

BUREAUCRACY WHEREVER FOUND IS A MENACE
—WHEN APPLIED TO THE PRACTICE OF
MEDICINE IT IS FATAL

The book of the hour in England is written by Lord Hewart, Lord Chief Justice of England, and appears under the title of "The New Despotism." By "the New Despot" the lord chief justice means that hampering bureaucracy, spreading like pursley throughout the civilized world, and that is really but clever camouflage for a steadily encroaching socialism.

The United States is admittedly the worst law-ridden country in the world, yet even England is beginning to feel the pinch of bureaucracies. Poor England! Suffering already under the panel system of doctors and state medicine. What is going on in England in behalf of bureaucracy is proceeding at a double quick in America. Because of this, F. G. Bettany's epitome of Lord Hewart's volume, quoted from the *London Bookman*, December, 1929, furnishes food for thought to the American public, and especially to the members of the medical profession, a group of men protesting even now at being made the catspaw to pull political chestnuts out of the fire. For "Government" read "Federal," for "Ministers" read "Legislators," for "Parliament" read "Congress."

Writes Mr. Bettany:

"It is a novelty to find a Lord Chief Justice of England stepping down from his Bench to make a direct appeal to the nation against the encroachments of the Executive. But the case is urgent, as the Government would seem itself to admit by the appointment of a Committee on the subject one day in advance of the issue in book form of the distinguished judge's indictment,

and Lord Hewart deserves the thanks of the community for the courage and public spirit he has shown in thus directly challenging and exposing the threat to liberty involved in "The New Despotism." The "despot" he arraigns is the bureaucrat or departmental official, and the menace to the alarming growth of which he calls attention is so-called "administrative" or department legislation. His is no solitary cry on this theme; it is but the climax of protests which have come from many other of our judges who long have complained of the present-day tendency not only to invest the executive with legislative powers, but also to oust the control of the regular courts and make the bureaucracy judge in its own cause.

It will startle most readers of Lord Hewart's book to learn that what he calls "delegated" legislation has in recent times enormously exceeded the amount of direct legislation by statute. We have grown up in the belief that Parliament enacts our laws and that zealous M. P.'s keep careful watch over the provisions and wording of any new measure. Today that is largely an illusion. The majority of modern bills are introduced by Ministers at the instance of their Departments; in such measures Ministers enumerate certain principles or intentions, and claim *carte blanche* in the matter of details and application. They secure powers to issue rules applying their Bills, which are of course framed by some departmental official. Having prepared this Bill in skeleton form, the official fills in the gaps with his own orders. More than that—by ingenious phrasing he secures for them the force of statute, makes his own decision final and prevents any sort of appeal to a court of law. The slipping into the Bill of some clause in an obscure subsection will do the trick, and so orders and regulations have been made behind the back, without the control and without the real assent of Parliament, and the Courts have been deprived of the right to inquire whether the rules were or were not *ultra vires*.

In this way a remarkable constitutional change is being effected by our bureaucrats without the public being conscious of its progress and with Parliament too distracted as a rule by party regimentation to detect the danger. Governments of various complexions have sanctioned or been vic-

timized by these departmental encroachments. Whips hurry through Government Bills on the last days of a session when members are too jaded to keep their eyes open for the minutiae of legislation. And so, with the piling up of new laws and the congestion of the supposed law-making machine, power is passing from Westminster to Whitehall. "A mass of evidence," says Lord Hewart (and he quotes is extensively), "establishes the fact that there is in existence a persistent and well contrived system intended to produce, and in practice producing, a despotic power which at one and the same time places Government departments above the sovereignty of parliament, and beyond the jurisdiction of the Courts." Lord Hewart, it has been suggested, has too high an esteem for Parliament. Certainly Whitehall does not err on that side. Its departments are full of experts, and experts, here as elsewhere, have a poor opinion of Parliamentary institutions. The rule of Law in their opinion has been a failure; the rule of the expert, which would be both scientific and benevolent, would prove a vast improvement. With the best intentions then they are seeking to bring about the change.

One accepts Lord Hewart's indictment of the "new despotism" because there is no alternative to doing so; he proves his case up to the hilt. The statutes and regulations he gives at length furnish irrefutable testimony. Here is the customary clause by which the bureaucrat filches control: "If any difficulty arises in connection with the application of this Act . . . the Minister may by order remove the difficulty, and any such order may modify the provisions of this Act, as far as may appear to the Minister necessary or expedient." Read for "Minister" the bureaucrat behind him. Further we find in some cases an enactment that "the Board may confirm the order . . . and the confirmation shall be conclusive evidence that the requirements of this Act have been complied with, and that the order has been duly made and is within the powers of this Act." So the bureaucrat prevents an appeal against himself to the judges. He has even tried. the Lord Chief Justice shows, to subordinate the judges to the departments, and compel them to give opinions beforehand on hypothetical cases; and Lord Hewart urges that, not con-

tent with this blow at judicial independence, the bureaucrat, by his calls for a "Minister of Justice," who would make appointments to the Bench, aims at reducing the judges to a branch of the Civil Service. His wrath on this point can be readily understood, but here he is only dealing with surmise. In the rest of his attack on the "new despotism" he is handling facts—facts so formidable that the mere recital of them ought to insure a remedy.

DR. JOHN E. TUITE, OBITUARY

Dr. John E. Tuite, aged 65 years, president of Illinois State Medical Society in 1928-1929, died at his home in Rockford, February 26, of a complication of diseases of the bladder. He had been in ill health for about a year but had been active up to two weeks ago.

Dr. Tuite is survived by his wife and a daughter, Margaret, and a son, Dr. John F. Tuite, Jr.

Dr. Tuite was born in Clark county, O., July 20, 1864. He was graduated from St. Ignatius College, Chicago, in 1887. A year later, however, he was ordered to rest for his health and he went to San Antonio, Tex., where he became interested in the shoe business.

In 1892 he came to Rockford, where he started a shoe factory. His medical ambition remained, however, and he returned to Rush college, from which he was graduated in 1900. He began the practice of medicine here the same year.

In 1889 Dr. Tuite married Frances Schmauss of Rockford. She died in 1900, leaving him with a son and daughter. In 1908 he married Helen Emma McSweeney of Rockford.

Besides his membership and office in the state association Dr. Tuite was also a member of the American College of Surgeons.

DR. P. J. H. FARRELL A CANDIDATE FOR CONGRESSMAN-AT-LARGE

We call your attention to the fact that Brig. Gen'l (Doctor) P. J. H. Farrell of Chicago is a candidate for Congressman-at-large for a seat in the National House of Representatives. The country has had suffering enough from vicious legislation planned by laymen to interfere with and dictate the practice of medicine.

In the name of humanity and progress let a few physicians have something to say about legis-

lation. Congress is made up largely of lawyers. there are only a few physicians in the national body of lawmakers. Yet the doctor comes closer to the problem of the average citizen than any other professional man.

Dr. Farrell is a candidate (Republican) for Congressman-at-large from the State of Illinois. He is capable, efficient and experienced. For the good of the country we should have several medical men representing us both in Springfield and at Washington.

Go to the polls Primary day, April 8, and vote for Brig. Gen'l (Doctor) P. J. H. Farrell.

DOCTORS WISHING TO READ PAPERS BEFORE THE SECTION ON RADIOLOGY AT THE STATE MEETING

Doctors wishing to present papers before the State Society meeting to be held at Joliet, May 20-22, 1930, kindly communicate with either Dr. I. S. Trostler, chairman, 25 East Washington street, Chicago, or to Dr. H. W. Grote, secretary, Bloomington, Illinois.

Papers will be given precedence in order of their application.

COMMERCIAL HOUSE OVER RADIO RECOMMENDS PERIODIC HEALTH EXAMINATIONS

The Pepsodent Company is now advocating periodic health examinations from time to time in connection with their other broadcasts of Amos and Andy. This was undertaken at the suggestion of the officers of the Chicago Medical Society.

THAT CHARITY IS PERNICIOUS WHICH TAKES FROM INDEPENDENCE ITS PROPER PRIDE AND FROM MEN-DICITY ITS PROPER SHAME

In his inaugural address before the Chicago Medical Society June, 1929, Dr. Charles B. Reed says:

"The practice of charity is one of the most ancient and glorious traditions of the medical profession, and only recently the Chicago Medical Society reaffirmed and published in its official transactions the ethical ideal that it is ready and willing at all times to serve the citizens of Cook

County irrespective of their economic status. The profession feels, however, that only too frequently its desire to serve the public is misunderstood or taken advantage of by the unworthy. *That charity is pernicious which takes from independence its proper pride and from mendicancy its proper shame.* The abuse of charity leads for the physician to pauperization of the body and for the patient to the even more serious pauperization of the soul. In both cases civic pride is abolished by the personal degradation. The abuse of charity arouses the indignation of the physician because every such case prevents the extension of legitimate aid to a worthy object. This state of affairs is liable to continue, however, until society learns that the successful distribution of medical charity is a specialization which can only be accomplished through the exercise of the principle that **MEDICAL MATTERS MUST BE MANAGED BY MEDICAL MEN.**"

**RUSSIA PROPOSES THE ABOLITION OF
PRIVATE MEDICAL PRACTICE—RUSS
DOCTORS GO COMMUNIST—KULAKS
SUFFER—PHYSICIANS ORDERED
TO TREAT WORKERS FIRST,
THEN RICH CLASSES**

Carroll Binder in the *Chicago Daily News*, February 2, 1930, says:

The class principle will be introduced into soviet medicine under instructions of the new health commissar, M. Vladimirsky. Henceforth soviet medicine must be mainly directed toward the service of the proletariat, he has told the Moscow medical congress.

In capitalistic nations only are the wealthy classes served by medicine, while the workers are treated by barbers and witches, according to the commissar. Under communism the favoritism reverses.

NEPMEN MUST PAY MORE

Vladimirsky ordered the public health service to change the policy in the dental clinics and state health resorts, where in the normally overcrowded hospitals and clinics after all the proletarians are accommodated the nepmen, or small traders, and the kulaks are admissible at considerably higher prices, but not otherwise.

Simultaneously M. Popox, chief of the Mos-

cow health department, has proposed the abolition of private medical practice. Physicians connected with state institutions already are forbidden to accept private patients so that the medical service available to numerous disfranchised persons is severely limited.

LAND CONFISCATION PUSHED

An important decree issued yesterday legalizes the already widely prevalent practice of confiscating the property of the kulaks, as described in early dispatches.

Newspapers still report resistance on the part of some kulaks, but the number of acts of violence and punitive executions reported are fewer.

Correspondence

**THERE IS NO INTERNATIONAL UNI-
FORMITY IN COLLECTING MORTAL-
ITY STATISTICS. THEREFORE,
THE DEATH RATE OF DIFFER-
ENT COUNTRIES CANNOT
BE COMPARED.**

Chicago. February 15, 1930.

To the Editor: The advocates of the Shepard-Towner bill and other bemoaners of the fate of childbearing women in this country point with great authority to the fact that the United States has a higher maternal death rate than nearly every other country in the world. This "fact," which is based upon statistics and is therefore considered unequivocal, is by no means limited to lay magazines and newspapers, where well-meaning but misinformed reformers write heart-rending tales. Unfortunately the "fact" is also found in medical literature.

Wherein lies the fallacy? Simply in the realization that there is no international uniformity in collecting mortality statistics. Therefore, the death rates of different countries cannot be compared. Those who are obsessed with the idea that the United States is seventeenth on the list of maternal deaths, point out Russia, Italy and England as having low maternal death rates. The truth is, however, that since 1915 no trustworthy statistics have been published about Russia. Regarding Italy, there is no available information as to how their statistics are collected and England cannot be compared with our coun-

try for the following reason. The United States Census Bureau makes no distinction among women who die in the "puerperal state" by which is meant a death during pregnancy, confinement or period of nursing or a death which occurs within one month after the cessation of any of these three functions which can be connected with the term "puerperal death." The English, on the other hand, make several distinctions and therefore have a different classification which does not permit comparison with our statistics.

Because it has been impossible to compare the death rates of different countries, at the meeting of the American Medical Association held in Atlantic City last May, the Health Section of the League of Nations considered it important enough to call attention to this matter by posting a chart which bore the caption "International Incomparability of Mortality Statistics." In 1921 the Committee on Maternal and Infant Welfare of the Massachusetts Medical Society issued the following statement: "The undersigned regret the readiness with which medical writers all over the country have been willing to concede inferiority in obstetrics in the United States merely because of foreign statistics gathered under unknown conditions."

The truth is that good and bad work in obstetrics is done in every country; but the mortality rates for mothers and infants are certainly no greater in this country than they are in any other country. What we need here as elsewhere are more lying-in hospitals; for through them the number of maternal deaths will be considerably diminished. From my own observations abroad I have no hesitancy in saying that a pregnant woman is safer in a good maternity hospital in this country than she is anywhere in the world.

J. P. GREENHILL, M. D.

THE UNITED STATES HAS NOT A HIGHER MATERNAL DEATH RATE THAN THE OTHER CIVILIZED NATIONS

IF WE FOLLOW THE ENGLISH SYSTEM OF TABULATING,
OUR STATISTICS WOULD TELL
A DIFFERENT STORY

Chicago, February 15, 1930.

To the Editor: I was more than gratified to see your editorials on maternal mortality statis-

tics. Such statements should be printed in every medical journal in the United States.

In the December, 1925, issue of the *Mothers' Aid Message* I wrote the enclosed editorial. It may interest you also to note that in the September, 1929, issue of the *American Journal of Public Health*, M. Nicoll, Jr., Commissioner of Health, State of New York, said the following:

"As good Americans, we claim and frequently exercise the inalienable right to criticize and condemn our own shortcomings as a nation, and in this spirit most of us at one time or another in our moments of oratorical inspiration have called upon our audiences to witness the disgraceful neglect of expectant mothers prevailing throughout this country, resulting in a higher maternal death rates than in most of the civilized nations. This fact would seem to be proved statistically, and yet before permitting ourselves to indulge in too violent self-condemnation, let us be certain that the figures of other countries are as accurate as ours, and based on identical methods of allocating causes of deaths. Furthermore, those countries that show the lowest maternal death rate are very small in area compared with the United States, and contain a much more homogeneous population than that with which we have to deal. No nation, except ours, is called upon to face such a racial variation in fitness for motherhood. It can hardly be supposed that maternity work in certain states in the northwest is accountable for the low maternal mortality as compared with that of most other states; it is rather the physical development and habits of people of Scandinavian blood, among whom in their mother country the maternal death rate is exceedingly low, and, incidentally, lower than among the immigrants of that race and their descendants in this country."

In the discussion on maternal mortality at the meeting of the American Medical Association in Portland, July 12, 1929, C. E. Mongan said the following:

"There is a tendency in the United States to compare our statistics with those of European countries to the detriment of the United States. Dr. Thomas J. Duffield of New Jersey wrote in 1923 a graduation thesis for the Massachusetts Institute of Technology in which he shows how divergent the methods are in collecting vital statistics in Europe. Switzerland seems to be the

one country which has a fair and accurate method. English statistics are often quoted. Newsholme, in his vital statistics, shows how 1,086 puerperal deaths are eliminated. By his process the death rate in England in one year was reduced from 5.46 to 4.12 per thousand births. The United States Census Bureau will not allow physicians in the United States to follow the English plan. Offhand I would say that it would reduce our number of deaths by about 4,000. Under these circumstances would it not be better to compare the statistics of one state with those of another rather than the whole of the United States with those from foreign countries? If we followed English methods our statistics would tell a different story. There is no other country which has to contend with such climatic, social and economic conditions as is the case in the United States. In the South the negro woman has a high mortality rate in the puerperal state."

Very sincerely.

J. P. GREENHILL.

THERE ARE NO COMPARABLE RECORDS SHOWING THAT THE UNITED STATES OCCUPIES FIFTEENTH PLACE OR ANY OTHER POSITION IN MATERNAL MORTALITY STATISTICS

Chicago, Ill., February 4, 1930.

To the Editor: I have your letter of January 16, 1930, relative to statistics of maternal mortality and morbidity. I may state that I have no reports that are comprehensive enough or that are based on comparable records showing that the United States occupies fifteenth place or any other position in maternal mortality statistics. I know of no statistics on which such a statement can be based. For this reason I am one of those who has not been decrying our own methods and results.

In my own practice and that of my colleagues I do not see maternal mortality and very little morbidity. Infection and toxemia simply do not occur.

I agree with you that the statistics so often referred to are of little or no value for the reasons you say, and I am glad you are interested in this matter.

CAREY CULBERTSON, M. D.

AUTOGENOUS VACCINES

By means of a questionnaire, Robert A. Keilty, Washington, D. C. (*Journal A. M. A.*, Jan. 11, 1930), ascertained that vaccine therapy is apparently being used only by a small percentage of the profession. Good results from vaccines, as shown by 65 per cent of cases in group A of the series, may be obtained by the ordinary methods of preparation. Results are improved and increased when vaccines are made from carefully selected floras and the doses fixed according to the predominance of organisms, irrespective of the number in the final suspension. It is not necessary to count the bacteria by any method in a vaccine preparation. The dosage should be given and timed according to the local and general reactions produced. As a rule, one may start with 0.1 cc., increase the amount every other day from 0.1 to 0.2 cc. until the maximum, 1 to 1.5 cc., is given. The dose should then be reduced just short of reaction and continued at five-day intervals. From fifteen to twenty doses should be given over a period of from three to six weeks. A follow-up series should be repeated in from two to six months. Autogenous vaccines are not cure-alls, but have a definite field of usefulness. If they are reserved for the selected cases, in which they may be expected to help, they will show an improvement in well over half of the cases, some brilliant complete cures and some flat failures.

THROMBOANGITIS OBLITERANS

In the Medical Journal and Record for April 3, 1929, A. M. Rechtman says:

The pathology was described as an inflammatory lesion of the arteries and veins with the presence of giant cells and cellular thrombosis in the acute lesions. The first symptom complained of is intermittent claudication. It appears early in the feet or in the calf of the leg as a pain or cramp caused by exercise, such as walking, and is relieved by rest.

DAMNED IF YOU DO AND DAMNED IF YOU DON'T

GETTING OUT THE JOURNAL

Getting out a bulletin is no picnic.

If we print jokes, people say that we are silly.

If we don't print them, they say we are too serious.

If we print original matter, they say we lack variety.

If we publish things from other papers, we are too lazy to write.

If we stay on the job, we ought to be out hustling news.

If we are hustling news, we are not attending to business in our own department.

If we don't print all contributions, we don't show the proper appreciation.

If we do print all contributions, the paper is filled with junk.

Like as not some one will say we swiped this from an exchange. So we did.

Original Articles

NATURE AND GENESIS OF ADVENTITIOUS FOLDS AND ADHESIONS OF THE PERITONEUM*

ARTHUR E. HERTZLER, M.D.,
HIALESTAD, KANSAS

The Problems Involved. There is probably no subject in surgery regarding which so much uncertainty exists as about adhesions. Anything not in harmony with the textbook pictures in anatomy is too commonly regarded as abnormal. This leads to useless tinkering with the abdominal architecture. But, what is more important, it misleads the operator in his search for the cause of the patient's symptoms. A fold of peritoneum is seized upon as evidence of past disease or of chronic inflammation of this or that organ and in correcting the supposed lesion the search for the real disease is abandoned.

One example will suffice. An unusual fold is found about the appendix which the operator does not understand. He thinks of a past attack of appendicitis. If also the appendix is hyperemic he is quite apt to think of a recurring appendicitis. The hyperemia may be due to dilatation of the subperitoneal vessels only, a veritable varicosity, without any involvement of the deeper vessels and without the concomitant swelling due to edema. What this should spell to the operator is trouble, not in the appendix, but in some neighboring organ, the gall bladder, the stomach, the pelvic organs, an acute pancreatitis, intestinal obstruction, or what not. This fallacious reasoning, if reasoning it can be called, has led to the yet commonly accepted view of chronic appendicitis which is, of course, not a disease entity, but like religion, is a state of mind quite incapable of clinical demonstration or proof in the laboratory. Both being incapable of proof are, in consequence, incapable of disproof.

The first clue to a correct diagnosis in such a picture is the proper interpretation of the gross anatomic findings. Two causes lead to confusion. The development of the gut tract is imperfectly understood. This leads to a misinterpretation of folds that are unusual but perfectly

normal when viewed from the standpoint of development. Second, adhesions are regarded as evidence of former acute infections, especially suppurative lesions. The first fallacy can be corrected only by a first-hand knowledge of the various stages of fetal development. The second fallacy becomes clear when we understand that adhesions which attend acute infective processes are temporary in nature and once the inflammation subsides, the purpose which brought them into being no longer exists, they vanish, leaving little or no trace. Permanent adhesions result generally from mild infections or aseptic trauma generally due to the efforts of some well-meaning but misguided operator. In this connection it must be remembered that in its earliest stages inflammation parallels the processes of wound healing as is evidenced by histo-chemical study. It is only those inflammations which do not go beyond this stage that are followed by permanent adhesions.

A misinterpretation of the importance of adhesions leads to a presumption of their existence when the patient is not relieved from his ills by operation. Adhesions in themselves, as a matter of fact, produce no symptoms. It is only when they disturb the function of an organ that they become of clinical importance. If, instead of ascribing the persistence of symptoms to adhesions, a renewed effort were made to extend the diagnosis, but little complaint would be directed to the adhesions.

In the study of adhesions, as in the investigation of other practical subjects, it is a mistake to separate the laboratory from the clinical study. If an unusual fold is encountered a review of the clinical history is in order to determine if such a structure in any way could account for the symptoms. If this point is kept in mind the presence of adhesions will not cause a fright. One needs only to remember, for instance, the very extensive adhesions commonly seen in peritoneal tuberculosis to understand how abundant they may be with little interference with the functioning of the intestinal tract. The mere discovery of an adhesion spells nothing so far as symptomatology is concerned and, of course, the mistaking of an unusual fold for an adhesion means less than nothing because it is wholly misleading.

It is my purpose, in the first place, to review

*Read before Section on Surgery at meeting of Illinois State Medical Society, at Peoria, May 21, 1929.

briefly the embryological development of the peritoneum and to compare the unusual features in development with the topographic anatomy of the adult, and in the second place to show the fundamental factors which determine whether an adhesion will be temporary or permanent. I shall likewise indicate the means we have of distinguishing between permanent adhesions and adventitious folds as we see them at the operating table. In the discussion of this feature I shall be obliged to confess that my information is fragmentary and indefinite, compelling my presentation to be tentative and hesitating. My statements can but indicate the lines along which, in my judgment, our studies should proceed.

The Normal Anatomy of the Abdominal Viscera. Nowhere is a working knowledge of the variations in anatomic structure so important as

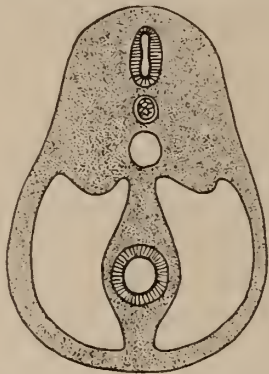


Fig. 1. Schematic drawing representing the mesentery, and the primitive gut tract. (Minot.)

in the interpretation of unusual peritoneal folds. Such knowledge can be gained by the study of fetuses, with which most laboratories abound, by observation of the variations in anatomic structure at autopsies and by noting the unusual during the performance of abdominal operations.

Embryology of the Gut Tract. Before about the third or fourth week of fetal life the future gut tract is represented by a cellular mass which extends from the region of the aorta to the anterior abdominal wall dividing the future abdominal cavity into two compartments (Fig. 1). The primitive gut tract develops in this mass. The portion of the dividing septum anterior to the gut tract and below the stomach disappears at about this time. As the gut tract develops it becomes too long for its space and coiling is necessary and continues until the adult stage is reached. It is this readjustment of the relation

of the various segments of the gut tract to the available space that makes our problem.

At first a single loop develops (Fig. 2) in the lower limb of which a bud appears, the future

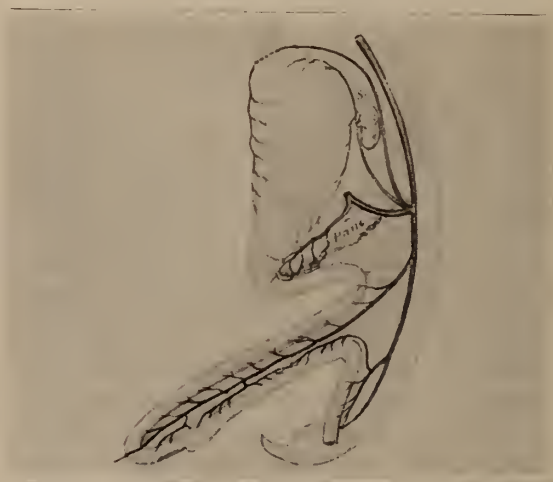


Fig. 2. The primitive digestive organs and their vessels. (Hertwig.)

cecum. This bud becomes a point of identification which enables us to follow the subsequent migrations of the big gut. The upper limb of the loop forms the small intestine. The future cecum comes to pass over the upper limb of the primitive loop in order to reach its final resting place in the right lower quadrant of the abdomen (Fig. 3). The motivating factor seems



Fig. 3. This is the common presentation of the text-books on embryology. The cecum invariably crosses the midline just below the pyloric end of the stomach.

to be the rapid development and rigidity of the future big gut forcing the cecal bud to pass over the upper limb of the primitive loop.

It is in the migrations of the cecal bud that the pictures in the embryology books lead us astray. They indicate that the cecum describes a more or less wide circle and flops at once into

its permanent resting place. It is not so. The future cecum in passing from left to right first becomes attached to the posterior abdominal wall

sible the great variety of folds so commonly mistaken for adhesions and accounts for the variations in position of the cecum and appendix. It is this normal variation in normal intestinal topography which has caused the great furor operatoria among a host of operators.

The first cause of confusion is the early attachment of the great omentum, either directly to the cecal bud or near it, at the same time that



Fig. 4. The colon in its migration receives its first attachment over the duodenum close to the pylorus. The great omentum becomes first attached to the colon at this point. In some instances the attachment is closer to the ileocecal junction than shown in this figure.

just beneath or a little to the right of the first part of the duodenum, the attachment becoming the future duodenocolic ligament (Fig. 4).

The gut tract in this stage does not have the individual coats which ultimately form the gut

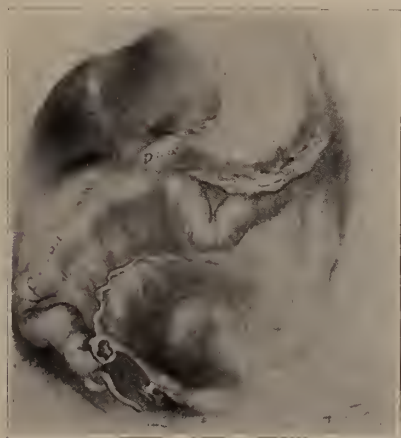


Fig. 5. In rare instances there is an extensive adhesion of the ascending colon to the posterior parietal wall. This wide fusion may persist throughout life. Compare Fig. 10.

wall. The walls are plastic protoplasmic walls admitting of the formation of attachments much more readily than does the adult gut. Because of this plasticity the early gut tract is quite commonly submerged in the posterior parietal wall and only later acquires a mesentery (Fig. 5). This late acquisition of a mesentery makes pos-



Fig. 6. The early fusion of the great omentum to the colon may result in this structure being carried to the right parietal wall and may even become attached to it. The "double-barreled colon" may result from this condition.

it becomes attached to the first part of the duodenum. As the cecum develops the omental fold is conveyed with it toward the lateral abdominal wall where it even may become attached producing the ligament of Haller (Figs. 6 and 7), a

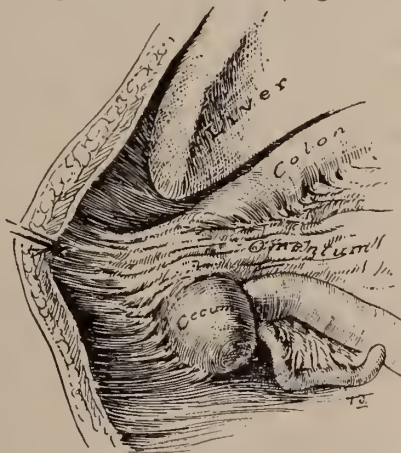


Fig. 7. The omental attachment in the foregoing may be represented by a small band of omentum and then is easily mistaken for an adhesion.

structure very commonly regarded as the product of a past inflammation. In this early stage the adventitious folds are numerous and if they all persisted to the adult state many a surgeon would be given a fright which he now escapes. Time permits only of the examination of the genesis of the more common folds which interest and confuse the operator.

Because of the comparatively large size of the liver in the embryo, as the gall bladder develops it pushes itself downward between the liver and pylorus and the future big gut. It is at this point that the great omentum first becomes at-



Fig. 8. The various ligaments extending from the liver to the hollow viscera are well marked. The hepatoduodenal ligament is shown extending over the duodenum to the colon. (Seven-month fetus.) Such ligaments are more pronounced in the fetus than in the adult.

tached to the future transverse colon as above noted. It is not surprising, therefore, that the cystic duct regularly, and the gall bladder frequently, has a meson. Therefore, to regard every fold extending from the gall bladder to the duodenum and colon as an adhesion is to court error. The presumptive evidence always indicates a normal meson. There are many points of attachment of the liver to the gut tract in the embryo not commonly observed in the adult. These persist oftener than many surgeons realize and have found a place in the nomenclature, namely the hepato-duodenal and the hepato-colic (Fig. 8). These may exist in a variety of forms and locations. Any peritoneal band extending from the colon and attached to the liver itself is almost sure to be a normal fold (Fig. 9.) The adult liver is little prone to form adhesions because its capsule lacks the subendothelial structure

that favors the formation of adhesions between other peritoneal structures. To produce adhesion to the liver in the experimental laboratory



Fig. 9. Bands extend from the colon to the gall bladder and to the liver. Attachments to the liver proper are always the result of disease or operative trauma. In the case here represented there was a ball-valve stone which accounted for the cholecystitis. The clinical history bore out the anatomic findings.

it is necessary to destroy the fibrous capsule as well as the endothelial cell layer. It is not surprising, therefore, to find that adhesions about



Fig. 10. Cecum submerged under the parietal peritoneum, anatomic finding. No history of any abdominal disturbance.

the liver itself are most commonly the result of operative trauma.

It is the cecal region, however, that shows the greatest normal variations. The location of the



Fig. 11. Parieto-colic ligaments, a common finding at the operative table, are of no anatomic or clinical significance.

cecum at a given period of the fetal development is the most inconstant thing in anatomy. It has been noted that at the early stage the colon is submerged and only later acquires the degree of mobility common to the adult. In securing this mobility it acquires various folds which extend from it to the parietal wall. Sometimes the emergence is incomplete and the colon remains submerged by what appears to be an adventitious band (Fig. 10) which is little different from the later attachment of the great omentum al-



Fig. 12. A prominent genitoenteric fold from the ovary to the terminal portion of the ileum. This represents the ilioovarian ligament of Durand. The ligament becomes prominent only when the terminal ileum is lifted out of the pelvic. Normal specimen from a new-born child.

ready referred to as Haller's ligament. Lesser attachments are called parieto-colic ligaments (Fig. 11). The sight of such a fold is very apt

to produce pruritus digiti on the part of even the more conservative surgeon.

Gross Anatomy of the Gut Tract. Having glanced at the development of the gut tract with the resultant folds it becomes necessary to study the relations of these folds to the viscera in the adult.

It must be insisted on that the folds be observed as the viscera are in their normal position. If they are pulled hither and yon a limitless number of folds can be produced which in fact do not exist. It is worth while to review some of the normal folds which most often lead to confusion.

It is the ileum that has been the site of such artificial folds that have led to the most ludi-

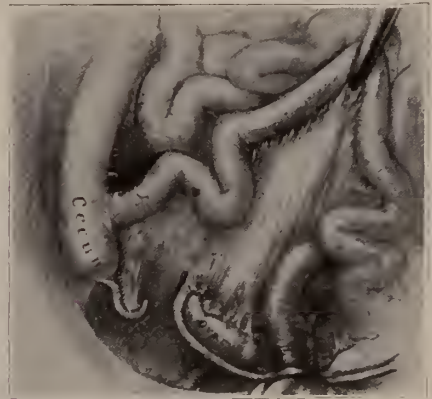


Fig. 13. Same as the preceding, showing the necessity of pronounced traction on the ileum before the band becomes prominent.

crous conclusions. This is due wholly to its mobility. Coming as it usually does, from the depths of the pelvis to reach the cecum it naturally has a peritoneal covering most convenient for every-day wear. When it is lifted from its normal habitat this covering naturally is put on a stretch, the most commonly producing the genito-enteric band, (Fig. 12) a structure non-existent when the gut lies where it normally belongs. The same applies to the ilio-ovarian ligament (Fig. 13). The failure to recognize this evident anatomic fact has made possible the amazing theories of Lane.

The relation of the appendix to the cecum has given rise to much confusion. When the appendix is truly retroperitoneal or frankly within the wall of the gut the condition is universally recognized as being of congenital origin, but when

the extraperitoneal situation is partial (Fig. 14) it is commonly regarded as the result of inflammation. Of course, an appendix so situated may become inflamed but this is no evidence that the inflammation preceded its peculiar peritoneal relationship. The proof of this can be adduced only by the location of the membranous limitans in the slide of a cross section. The important point is that such a relationship is not proof that the patient has had an appendicitis and the discovery of it does not end the surgeon's search.

The ileoparietal fold extending from the ileum to the lateral wall, forming a pocket for the cecum, is not an unusual fold (Fig. 15). The external and internal parieto-colic folds when the cecum is retracted upwards may appear as abnormal bands (Fig. 16) but when the cecum is allowed to return to its normal habitat these disappear. Sometimes more or less of the colon is covered by a peritoneum (Fig. 10) which finds its counterpart not infrequently in early fetal life. Whether or not they cause disturbance is

impossible to say. Good surgeons have held them guilty and report good results from their removal. No after results have been reported. Certain it is that they are often present without



Fig. 15. Ileoparietal fold commonly mistaken as the product of adhesion. This, together with the genito-enteric fold, is commonly the cause of a kink—if the ileum is lifted high enough.

producing any symptoms at all. One often finds them in bodies when no symptoms below the diaphragm were complained of during life. It is equally true that the cecum has been divested of

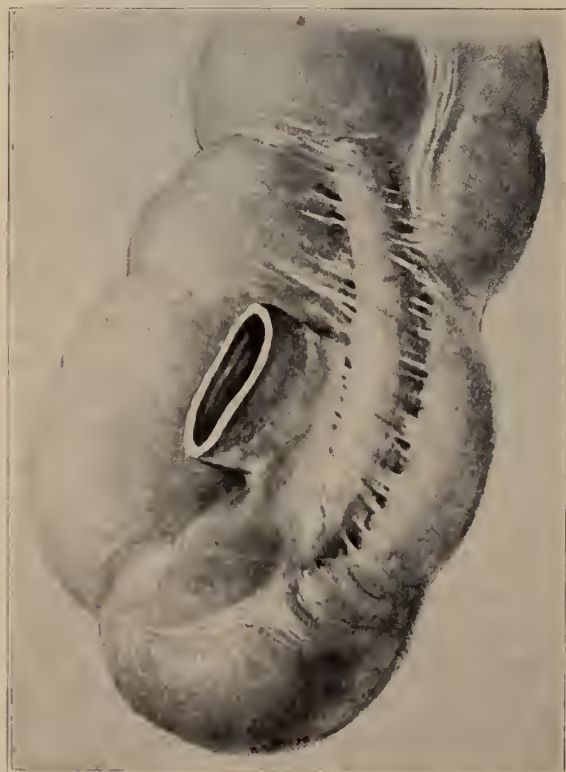


Fig. 14. Figure taken from a paper recently published. The condition is probably congenital. The question could be decided only by a microscopic study. The pathologist's report that the appendix was normal is obviously correct. In some of these cases the bands extending from the appendix to the cecal wall contain muscle fibres, proving that they are of congenital origin.

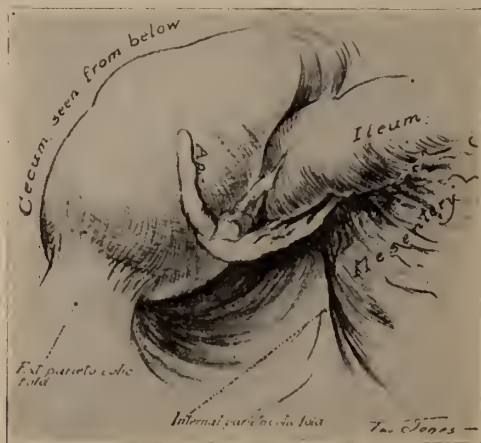


Fig. 16. Internal and external parietocolic folds made prominent only by traction on the cecum giving the erroneous impression of a fossa behind the cecum.

its peritoneal coat without cause and without result. These few examples suffice to illustrate the importance of an acquaintance with the unusual folds of the peritoneum.

It is impossible to over-emphasize the very

obvious fact that bands and ligaments which are produced when an organ is dislocated from its bed are always artificial. The cecum is particularly liable to give place to such structures because of its mobility. Traction in one direction produces a "band" on the one side, traction in the reverse direction produces a like "band" on the other side. When it is dropped into place all bands disappear. Nothing can be more obvious; no fact is more generally ignored.

Before a band or fold in question can be convicted of producing a constriction it must first be established that it does constrict. Such evidence is found in hypertrophy of the proximal thickening of the gut wall and a dilatation of the gut lumen. M. L. Harris let out a loud protest along this line years ago but it has not received the attention it deserved. It is argued that a band may cause trouble by limiting the movement of an organ when constriction sufficient to produce hypertrophy and dilatation does not exist. That is pure hypothesis. That such adhesions may cause trouble in rare instances may be admitted but it is necessary to prove the relationship of such bands to the symptoms complained of by a long observation of the aftercourse. Of course, acute obstructions are sometimes produced such bands but in these cases the relation is obvious.

The Formation of Adhesions. Having looked briefly at the various folds of the peritoneum which may simulate adhesions, it now remains to study the fundamental factors in the formation of adhesions. It is quite possible by the study of an adhesion to tell what the nature of the process was that produced it. This is of the greatest importance in practical surgery for one is often compelled to decide which adhesions were produced by disease and which by the operator who did the preceding operation. As a prelude one may put it down as a clinical fact that when a patient comes complaining of "adhesions" one may safely conclude that the patient is a neurotic and did not require an operation in the first place and also that the doctors who first used the term "adhesion" within the hearing of the patient know nothing about adhesions and little about clinical diagnosis.

Adhesions are divisible into two groups; the permanent which remain throughout life, and

the temporary which disappear after their purpose of limiting the extension of an infection has been accomplished.

It may be put down as an axiom that an infective process is accompanied by temporary adhesions which vanish after the infective process has run its course and on the contrary permanent adhesions are the result of aseptic trauma either mechanical or chemical.

To understand the two types of adhesions one must study the fundamental processes in wound healing. We can best do this by imitating in

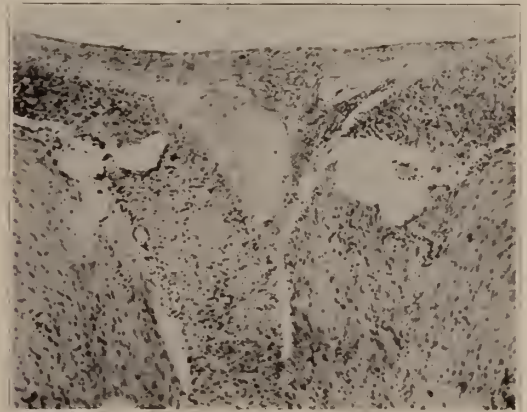


Fig. 17. Two intestinal coils have been united by a suture. The angle between the walls of the gut have been bridged by fibrin bundles extending from one gut surface to the other.

the experimental animal the procedures of the operating room. When two gut surfaces are united by Lembert sutures a serous exudate is thrown out within 10 to 30 minutes. This undergoes coagulation forming strands of fibrin extending from one gut surface to the other (Fig. 17). This is usually complete in two hours. These strands form the permanent union between the gut surfaces. They undergo chemical changes but are not renewed nor replaced nor do they vanish. These studies have been so fully confirmed by Baitsell and Wereschinski that I have no longer any hesitancy in presenting this as a most important fundamental fact in the interpretation of intra-abdominal adhesions.

The essential factor in the production of a permanent adhesion is that the exudate remains free from factors which prevent blood coagulation. The various digestive exudates and most infections do this. When the exudate is so contaminated fibrillar fibrin cannot be formed and

a granular exudate results (Fig. 18) which is incapable of conversion into adult connective tissue and must be resorbed and replaced by connective tissue produced by fibroblasts. The generally accepted conception of wound healing is based on the study of infected material exclusively. If surfaces are kept in contact sufficiently long permanent adhesions will result even in in-

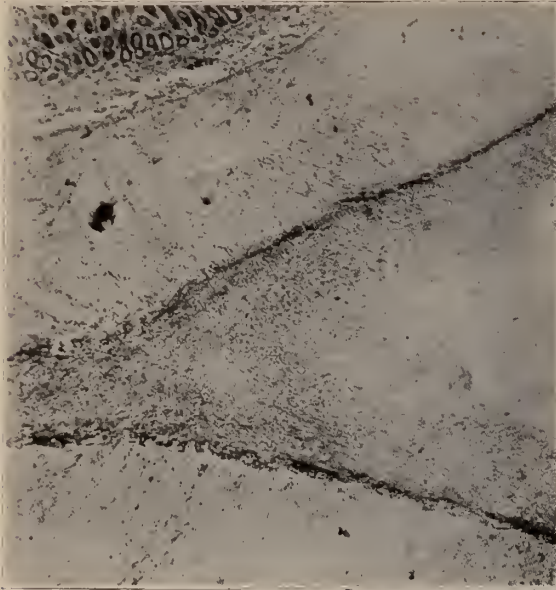


Fig. 18. The angle between the gut surfaces is filled by a granular fibrin the result of an infective process. The adhesion is temporary.

fectured material but in the ordinary course of inflammatory lesions in the abdomen they do not meet these requirements and as soon as the infection is overcome by the natural defensive forces the phagocytes remove the granular fibrin and the adhesions are released. However, if the process is such that infection is continuous and a secondary layer of exudate forms over the primary one the adhesion may become permanent. For instance, in a fecal fistula after drainage of an appendiceal abscess. The infection is kept up about the fistula and there gradually forms permanent fibrin or the granular exudate kept up by the continuous infection undergoes a fibrosis and therefore is permanent.

Those of us whose surgical experience goes back to the time when we saw our appendix cases only after an abscess had formed well know that the masses of adhesions which walled off the abscess had all disappeared when the appendix was removed 3 or 6 months later.

There is no more striking example of the capacity of adaptation in pathology than the study of just this process. Some twenty-five years ago (Trans. Western Surg. Ass'n. 1904) I studied this process in animals by sewing a glass window into the abdominal wall so that the process could be observed from day to day. This method has been employed by more recent investigators, notably by Westman (Arch. f. Gynak. 1929, cxxxv, 515). By this means one can observe how at first the coils remain quiet but after the reaction has run its course peristalsis becomes more active as the exudate is resorbed until finally the previously adherent coils have liberated themselves.*

Thus by piecing together the knowledge gained from histological study, clinical experience and direct observation we may know positively the life history of the temporary adhesion and why it is so.

Differentiation Between Unusual Folds and Adhesions. First, by a full acquaintance with the developmental processes so that we may



Fig. 19. The cysto-duodeno-colic ligament is made hyperemic and edematous by an inflamed gall bladder. There are no adhesions.

know where it is possible for such folds to form. In the absence of a previous operation it is always likely that an unusual fold is not an adhesion. To declare it the result of a pathological

*It is necessary to protect the window by a silver filagree; otherwise the window is soon soiled by contact with the intestinal coils so that further observation is obscured.

process. positive evidence must be adduced. Conversely, bands situated where anatomic folds cannot form must be due to some past disease process. Whether a fold is developmental or the product of past inflammation may be decided by the position of the leading vessel. For instance, if an unusually placed meson carries the chief vessel it is a normal fold and not the result of a past inflammation. Vessels in adhesions are usually small, almost capillary in size.

When adhesions complicate normal anatomical folds the problem becomes more difficult. The gall bladder region affords the most complex examples (Fig. 19). If the gall bladder cannot be elevated from the duodenum or if the peri-

ognize as a developmental anomaly. If in 3, Fig. 20, small vessels extended from the cecum to the appendix and we discovered the appendiceal artery in the position in the figure we would know the small vessels were the result of some past disease.

The appendiceal artery may not be in its usual position (Fig. 20). The meso appendix is without a vessel and one may erroneously conclude that none exists. The appendiceal vessel lies higher up and is covered by the cecum and may be overlooked in the course of the operation. It is of great practical importance to locate definitely the appendiceal artery lest it be overlooked and late hemorrhage occur.

Even when an unusual fold is proved to be an adhesion one still must decide whether or not it causes trouble or whether it is but a historical landmark. If not capable of harm it is best to leave it alone for if severed it may reform in a less favorable position. Practical experience shows that the vast majority of adhesions are of interest only because they tell us something of the past history. Often in removing a gall bladder, for instance, which is surrounded by adhesions the product of inflammation or previous operative trauma, one can remove the gall bladder by separating only a small part of the adhesions. Even in the familiar adhesions about the tubes and ovaries to which are ascribed the complaints of the patient, far too often when these are remedied the patient still complains. Other factors may be active which should be taken into account before the adherent tubes are attacked. It is not the adhesion but the patient's present complaints that must be foremost in the surgeon's mind.

Summary and Conclusions

1. An understanding of the embryology of the gut tract is essential to the understanding of the adult anatomy.

2. An endless study of anatomic variations as observed in the abdomens of those who had no complaints referable to this region is essential to an adequate comprehension of the extent of the anomalies of development.

3. Adhesions attending suppurative diseases are temporary.

4. Permanent adhesions are the result of mild infections or trauma.

5. Adhesions when encountered may be of



Fig. 20. Effect of the varying positions of the appendix on the location of the appendiceal artery (see 3) is commonly mistaken for an adhesion as is 4 which is obviously congenital because there was no appendiceal artery.

toneal attachment to the gall bladder extends from the sides of the gall bladder to the liver even to the abdominal wall there has been some irritative process at work. The adhesion of the great omentum to the gall bladder is always the result of disease or trauma. In the ileocecal region if the appendix is attached to the cecum but the appendiceal artery shows the presence of a meson elsewhere a past disease may be presumed. In Fig. 20—4, the appendix receives its blood supply from various sources. There is no appendiceal artery. This we may therefore rec-

but historical importance and their separation is not warranted unless it is demonstrated that they bear a direct relation to the symptoms now complained of.

RADIOULNAR SYNOSTOSIS, WITH REPORT OF A CASE*

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An unusual congenital deformity which has been termed "radioulnar synostosis" presents interesting features which warrant a detailed study of this peculiar anomaly and a report of a case.

This condition has also been called "congenital pronation" because of the inability of the subject to supinate the hand; that is, he or she cannot turn the palm upward. In other words, the wrist is in fixed pronation.

With advent of the x-ray in the study of the skeletal structures of the body, the presence of this lesion has been discovered in a small number of instances, but it was known in the pre-roentgen era through post mortem studies. Upwards of 100 cases of this lesion are recorded in literature. Kienbock¹, in 1910 reported several cases, Baisch², in 1912 described four cases and refers to 38 others, including those of Kienbock; Sontag³, Luden⁴, Grashey⁵ and Köhler⁶, are among those who have written on this rare lesion. The most illuminative presentation in English on radioulnar synostosis is the extended article by Davenport, Taylor and Nelson⁷, who jointly made a most thorough excursion into various fields in the study from many angles of 15 cases which they found to have this lesion.

Radioulnar synostosis is a congenital fault which consists of the fusion of the upper portions of the radius and ulna in a more or less degree of pronation due to which supination is impossible. The amount of fusion of the bones varies from one to six centimeters in length in the reported cases. In a little more than 50 per cent. of the studied cases the condition was found to be bilateral and occurred far more often in males

than in females. In several of the cases it was found to have occurred in successive generations of a family line but a careful analysis of successive issues in other families in which the lesion occurred, failed to show such a familial sequence. In certain strains this peculiar synostosis appears to be of a dominant mendelian character. The evidence seems to show that while its appearance does not exactly follow the mendelian formula, it is possible that some complex variation of this theory may be involved. In one family inheritance investigated by Davenport, Taylor and Nelson, they found that there was no regular pattern of occurrence of the lesion under consideration. One female appears to have been affected in four generations and one case of unilateral involvement was noted. The extensive involvement and sequence found in this one family is not duplicated in the pedigree charts of any of the other families studied by Davenport et al., who found that the usual occurrence of synostotic individuals in successive generations is far less frequent than is recorded in this particular family.

CASE REPORT

The case which came to my notice is that of A. B. C., a graduate in medicine. He is 28 years of age, white, and weighs about 165 pounds. He is of robust or stocky build. His appearance is not unusual although one may note a seemingly short neck, and the upper and lower extremities appear somewhat shorter than normal in relation to the length of the body. He is in splendid health and there is no history of a major injury to either of the upper extremities. Just prior to entering school at 5 years of age, a minor injury to the right wrist occurred when it was first noticed that he could not turn his hand in supination. There were no untoward events in connection with prenatal or obstetrical periods, so far as can be ascertained. No similar occurrence is known of in the two preceding generations. He is considerably handicapped in that he is unable to pronate either of the forearms. The left forearm is fixed in a position midway between pronation and supination, that is, about 90 degrees, while the right forearm is fixed in nearly complete pronation, lacking about 15 degrees. This enables him to use the left hand to a much greater degree than the right. In writing he has relatively little difficulty in holding the pen and writes a legible hand. In eating he has difficulty in handling spoon and fork and holds these as does an infant, that is, sideways with the elbow held high. In receiving coins, etc., he cups the left hand and can thus retain the object being handled with very little difficulty. Flexion and extension of the forearms are not restricted or interfered with. Both

*Read before Section on Radiology, Illinois State Medical Society, May 23, 1929, Peoria.

wrists, the hands and the fingers all function in a normal manner.

An x-ray investigation of the case reveals a bony fusion of the radii with the ulna. The synostosis amounts to about a centimeter on the left side and 6 centimeters on the right side. The bone texture is normal in every way. There is also an asymmetry at the wrists, the right one showing a degree of posterior luxation of the ulna with a prominent styloid process. The left wrist appears normal. No bone or joint variations were found in the neck, upper spine, lower thighs, knees or upper legs.

The type revealed in this case is the deformity found in the typical cases described by most of the authors who have reported this lesion in detail. Variants in the lesion are many. In many cases the forearms present different degrees of the pronation deformity right and left as regards the fixed position of the hands and lower forearms. In certain cases the integrity of the elbow joint is not altered, the articulating surfaces being smooth and regular. In a considerable number of cases there was an absence of the head of the radius, this structure being represented by merely a rounded upper end instead of the flattened knob form as seen in the roentgenogram of the normal. This has been called the "headless type." That it is an atavistic throwback is a possibility, as a somewhat similar development is found in the radius and ulna of the deer, in which these two bones are separated in the young animal but they normally become fused in the matured animals. One may also cite a similarity in the fusion of the several bones that form the human skull with fusion and resulting obliteration of interosseous spaces is a normal sequence in the aged. In none of the many cases reported have I found any reference to any accompanying synarthrosis of the nearby elbow joint.

A study of the two bones involved in this peculiar bony union from the phylogenetic standpoint reveals certain aspects which may have some bearing on its formation. It has been shown that the fins of fishes are forerunners of the body appendages in man, namely, the hands and feet. In the amphibia the number of bones distal to the humerus is reduced to two, one of which the radius, lies anterior supporting the carpus, and the other, the ulna, is posterior, containing the elbow process or the olecranon. It will be noted that when a child crawls prior to learning to walk it acts as a quadruped and in

so doing the radius is crossed in front of the ulna but when it attains the erect posture, the plane of the lower ends of the radius and ulna turn outward 90 degrees, that is, they supinate and thus assume the sagittal plane. In the ungulates, such as the horse, deer, etc., the ulna is rudimentary and, as has been noted in a previous paragraph, in the older deer the radius and ulna regularly undergo a fusion of their proximal portions. In bats, also, the radius and ulna are fused in like manner.

Embryological considerations of the subject under consideration reveals that in the earlier weeks of development of the human embryo, the arms grow outward almost perpendicular to the long axis of the torso and thus lie at right angles to it. They soon become flexed and turn medially so that the palmar aspects of the hand lie applied to the front of the chest. Thus the opposite ends of the ulna and radius become reversed in position. In this position an x-ray projection of the normal bones would present an appearance of the fusion of their upper ends due to overlapping, while the distal ends would be seen to be separated as they are not superimposed. Thus there is a relatively close approximation of the upper ends of the radius and ulna at this stage and it is conceivable that certain postural pressures would cause an increased contact or squeezing together of the opposing surfaces of the upper ends of the ulna and radius which might result in a mutation fault of development, the two bones becoming blended where the direct contact occurred. Another angle of the situation will be recognized in the fact that both of these bones arise from a single precartilagenous unit in which two centers later appear, one for each of the two bones of the forearm. Thus a synostotic state normally occurs in the early embryonic stages of growth. The event of an incomplete separation of these two centers may explain the occurrence of radioulnar synostosis. This failure of separation may or may not be an inherited trait; in some strains it appears definitely proven to have been inherited, but in other cases investigated it apparently is not a transmitted characteristic. In the case being reported the patient knows of not one other such occurrence in his family antecedents. Being a physician, he has made a thorough study of the situation and thus we may rely on

this point of there being no other involvements in his line.

It has been observed that in certain families in which synostotic individuals occurred in several succeeding generations they were all of short stature, while the isolated occurrences appeared in individuals who were not short or of the pudgy habitus.

In several instances of radioulnar synostosis, multiple cartilagenous exostoses were present which condition seems to be related to the lesion under consideration but the connection is not closely defined. The occurrence of other bony defects such as club feet, club hands, absence of certain fingers and toes, fusion of fingers, etc., has also been noted in a number of the reported cases of radioulnar synostosis. Having these concomitant conditions in mind one may speak of the lesion under consideration as in the classification of a dyschondroplasia. The common idea of this lesion appears to be that it is an inherited condition but in the case the subject of this report, no other similar instance in the antecedents has been discovered as has previously been stated. In the group of cases in which heredity plays a part, the inheritance is always in the male line, and it is bilateral in about 50 per cent. of the reported cases.

Note is made of the relatively greater occurrence in families in which there are consanguineous unions. Davenport et al., say "it may be remarked that a large proportion of the families we have studied at first hand are Jewish and thus belong to a race in which consanguineous marriage is relatively common. Thus of our 13 families, 9 are Jewish, 1 German, 1 French Irish, 1 Irish and 1 English."

The conclusions of Davenport et al. are as follows:

"On the whole, the evidence seems to favor the conclusion that there is some truth in all of the hypotheses and that radioulnar synostosis is a trait that, in different biotypes, depends on one, two or three factors; that it is usually an autosomal dominant (although the possibility that the gene for it may lie in the chromosome of certain families should be kept in mind), and that it is partially sex limited but variable in degree of expression, possibly owing to modifying factors."

In their summary, the same authors present the following:

"1. Radioulnar synostosis varies greatly in degree. these are: exostoses, clubfoot and clubhand, flatfoot, ab-the type in which the radius head is absent, the proximal end of the radius being fused with the ulna, and (b) the type in which the head of the radius is displaced toward the flexor side of the arm. The extent of the bony union varies from about 2 to 6 cms.

2. A comparative review of the mammalia shows that the radius and ulna are frequently united. This union is associated partly with their close proximity, so that any overgrowth of either bone may cause a permanent fusion of the two. When the use of the anterior appendage is not seriously interfered with, this union may become normal for a species, genus or family.

3. The radius and ulna develop out of the same pre-cartilage plate, and, at a later stage, the perichondrium of the two bones is continuous at their proximal ends.

4. The abnormal developmental impulses which lead to synostosis are indicated by other bony defects in the propositus or his family. Among the commonest of these are: exostoses, clubfoot and clubhand, flatfoot, abnormally diminished growth of long bones, short stature and bowlegs; in general, dyschondroplasia.

5. There are genotypical differences in the various families, which thus belong to diverse biotypes. In one family (M.) only one gene appears to be responsible for the synostosis, and this acts much as though in the 6 chromosome (but this is highly uncertain). In most families, distribution is that of a two-gene trait; in one of the families, of a three-gene trait. The synostosis is always a dominant trait.

6. Males are twice as likely to be affected as females; and this result holds for bone defects in general.

7. Frequent lack of symmetry in the defect suggest that there is frequent imperfection of dominance.

8. Consanguineous matings are found in the synostotic families; and it is probable that they are especially frequent in them.

9. Radioulnar synostosis appears to be a dominant partially sex-limited trait, which varies in degree of expression."

The essayist has endeavored to find record of successful corrective treatment for this condition but in each of the cases reported in which surgical attempt was made to provide relief, the effort proved unsatisfactory.

DISCUSSION

Dr. I. S. Trostler, Chicago: Mr. Chairman, I think this splendid presentation should not be passed without at least favorable comment, and while I have no definite data, I have had experience in breeding dogs for a number of years, of not a synostosis, but a defect which, as I recall, always occurred as a short left fore leg in about half the males. It never occurred in the females.

I had a very fine female water spaniel that I bred regularly. When it occurred we didn't know as much about this subject as we do now. I bred her to a prize

winning male the first time and got some fine dogs. I don't remember how many, but there were several of the first litter, the most valuable of the males, that had a short left fore leg. It was enough shorter that they would go down on one corner when they would walk, but did not affect the animal as a hunting dog or as a water dog.

I bred her the second time to the same male and got the same physical defect. Then my father, who was quite a student of that sort of thing, said, "Perhaps that comes from the father." So I bred her subsequently to other dogs and it always occurred at least once in a litter, showing that it was from the mother. As I remember it, it always occurred in the male dogs, and was always the same front leg. I am pretty sure it was the left front leg.

While I have not any means of giving exact figures, I would say that not less than one-third and probably more of the male "get" of that female dog had this same defect.

I want to personally thank Dr. Blaine for having presented this fine scientific paper.

Dr. Benjamin F. Gruskin: Dr. Blaine's paper is very commendable. In this, as in hemophilia, it is the female that transmits the trait to the male. It is probable that when conception takes place the female element is stronger than the male, and the latter is only a deviation from the former, and is more prone to carry with itself the weaker characteristics. Normally the Mendelian law does not transmit characteristic traits to the male only, both sexes indeed are subject to that law, but when some form of degenerative characteristic is transmitted it is prone to express itself to the deviated type.

Dr. Blaine: I think Dr. Trostler's remarks about the analogy are well taken.

In the case I am reporting, the patient insists there is not a history of any other involvement in his family. I venture the suggestion that he is unaware of other occurrences in his antecedents. From the study I have made of this condition it probably is an inherited trait that skipped a number of generations in which we have no record of its occurrence.

I appreciate Dr. Gruskin's favorable comments on the presentation. Finally, I wish to reiterate that while this particular case does not seem to follow the Mendelian formula, it is probably a variant of it. If we do not get one hundred per cent. sequence of a given fault, I do not think we should conclude that it does not check up with the Mendelian theory.

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ACUTE OSTEOMYELITIS*

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Introduction. Advancement in medical science during the past generation has been phenomenal. It has more than set the pace in the course of human progress. It has added more to the sum total of the world's happiness and advancement and saved more lives than all the other sciences combined. However, it has not served the human race to the full extent of its capabilities.

The subject to be discussed now represents only too well the significance of the last statement. Acute infectious osteomyelitis is such a formidable disease and has wrought such wide destruction, is so frequently overlooked and allowed to go unchecked that I make no apology for bringing it to your attention again.

The clinical course of acute osteomyelitis is dramatic in the extreme and has left hundreds of ghastly monuments to the unsuspected neglect of this desperate disease. The various stages of the disease are quite well defined and the pathology of each process has long been a subject of common knowledge and yet the pictures presented, both clinical and pathological, as well as x-ray, are depressing beyond compare.

I will confine my remarks to the acute suppurative form of the disease and allow for some future date to discuss the atypical and chronic cases.

There are few diseases capable of producing such disastrous results when unrecognized or inadequately treated, while at the same time lend themselves to prompt and intelligent treatment, with the conserving of life and limb and returning the victim to an approximately normal state in a few weeks.

Etiology. A child suffering from some focal infection or the acute exanthemata, has received a slight trauma to his limb or been exposed to cold and you have all the "makings" of an acute infectious osteomyelitis.

As far back as 1880 Senn called attention to all the well known etiologic factors, as they are

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recognized today, and except for minor details the same principles now prevail.

The important factors are: Bacteriologically staphylococcus aureus produces about 78 per cent. of all cases, albus 2 per cent., streptococcus 6 per cent. and pneumococcus 14 per cent.

Age. No age is exempt but the great majority occur between the ages of 4 and 12.

Focal infections with the acute exanthemata, play the all-important roles and more especially superficial skin lesions, and bad tonsils.

Slight trauma or exposure to cold or both are quite essential.

Anatomically. The terminal loops of capillaries as they approach the epiphyseal cartilage are evidently the principal factor in the determination of the location and lodgment of the septic emboli. Starr and others have found clinically and experimentally that the process begins on the diaphyseal side of the epiphyseal cartilage where the greatest per cent. of septic emboli lodge in these capillary loops.

Bones involved. Statistics show that the femur is involved in 30 to 39 per cent. of cases, the tibia in 35 to 40 per cent., the humerus in 10 to 15 per cent. and the radius 5 and ulna 3 per cent.

Pathology. The pathology and pathogenesis have been well described by many authors over a period of a half century and very little that is new has been added in recent years.

The chief underlying conditions responsible for the development of acute osteomyelitis are the numerous minute capillary loops as they approach the epiphyseal cartilage of all the long bones and the large nutrient artery carrying such an abundant blood supply to the shaft of these bones, which brings clumps of bacteria or tiny septic emboli that are filtered out in the small capillary loops near the cartilaginous plate. It is doubtful if many cases arise by extension of the infection from the periosteum.

In adults the narrow tortuous vessels in the same region are probably responsible for the location of septic emboli, although some are doubtless determined by the congestion at the sight of trauma.

Given a focus of bone infection, as above described, and the same laws governing the progress of an infectious process, manifest here as in soft tissue, namely, leucocytic infiltration, local

congestion and extension along the lines of least resistance. Compact bone and the epiphyseal cartilage prevent swelling, thus thwarting nature's attempt to wall off the process. This puts the offending bacteria about three paces ahead of the leucocytes at all times.

The great tension under which the infection exists, in the bone, forces the bacteria ahead through the first and second lines of defense and they may even be carried far back of the enemy lines by the blood stream. Here destructive activities are at once set up, again outwitting the leucocytes to the further disadvantage of the patient.

As this battle rages the infection is spreading along the lines of least resistance, namely, the epiphyseal cartilage to the periosteum and into the medullary cavity. When the compact bone is penetrated, further rapid extension beneath the periosteum soon leaves the bony shaft entirely separated from its food supply and death is the only alternative.

All this may take place in but a little more time than it has taken for me to describe it. Certainly within a period of 24 to 36 hours very extensive destruction of the bone may occur.

As many cases are undiagnosed for several days, so each day and even each hour, the process extends further beneath the periosteum and within the medullary canal, until a third, a half, or two-thirds of the shaft has been deprived of its blood supply in part or as a whole with partial or complete necrosis. Some time during this activity the periosteum gives way at one or more points and the infection begins its journey through the muscle planes and subcutaneous fascia seeking an exit through an intact skin which may not be accomplished for a month or more from the date of onset. In the meantime very extensive bone destruction has occurred.

Donaldson has shown that the causative organism may be found in the blood stream in 75 per cent. of cases. Where the process is due to staphylococcus aureus more extensive bone destruction is to be expected than from any other organism. He also claims that the staphylococcus rarely involves the joint while streptococcus frequently involves the joint and produces much less bone destruction.

Symptoms. With the essentials for an acute osteomyelitis as given under etiology, we find a

child with a sudden, severe onset of pain in a limb which localizes early near the end of the long bone, not in the joint. Pain, of rapidly increasing severity, is the first complaint, a pain far more severe than that of acute rheumatism or any other process in a limb. The pain is agonizing, deep, boring, continuous and increased by all movements, lowering of limb and pressure over affected area.

This cardinal symptom is accompanied in two to eight hours by a severe fever syndrome and prostration. Pulse and temperature rise rapidly to 140 and 103, respectively, within a very few hours. A high leucocyte count is found and a predominance of polys is to be expected. Lipuria has been noted by several authors and is considered by them to indicate medullary suppuration.

Objectively, aside from the above picture, there is only one thing that will complete the diagnosis in the early hours of the disease, and that is a definitely marked tenderness on long deep pressure over the diaphyseal side of the epiphyseal cartilage of the affected bone.

At this stage all local signs of inflammation are in abeyance. Swelling and edema are entirely absent and will not be manifest until such a time as the infection has found its way to the periosteum or even out into the muscles. This usually takes from eighteen to forty-eight hours, depending upon many pathological and anatomical factors. Some of these are: first, the primary location of the septic embolus; second, the density of the overlying bone; third, the virulence of the offending bacteria; fourth, the amount and type of overlying soft parts, that may obscure periosteal swelling.

At the end of a week or ten days or often a month when these cases are brought to the attention of the surgeon, we find the characteristics of a deep seated, ill defined and extensive inflammation, which simulates an acute cellulitis or phlegmon, a diagnosis not infrequently made in these cases. At this stage of the disease fluctuation is usually present within a very extensive swelling and often a discharging sinus is present, located far distant from the original site of the process. It is now that the patient presents a septic picture with a well established secondary anemia and the diagnosis is easily made by a careful history or an x-ray plate.

Diagnosis. Every physician, specialist or gen-

eral practitioner should constantly bear in mind the possibility of this dreaded disease, when confronted by a sick child.

Negligence at such a time should be classed among the greatest offenses to which the medical man may fall heir.

Early, intelligent treatment, based upon accurate diagnosis and a well recognized pathological process should be within the grasp of all.

The direct diagnosis must be made on the history and physical findings as given above, as the x-ray and other laboratory findings give no positive aid.

The chief diagnostic points within the first 48 to 72 hours are:

1. Child in over 80 per cent. of cases.
2. History of some local or general infection.
3. History of slight trauma to limb or exposure to cold or both.
4. Sudden severe onset with excruciating pain and early prostration.
5. Ninety-five per cent. or more are on the diaphyseal side of the epiphyseal cartilage of a long bone.
6. Seventy-five to eighty per cent. involve the lower limb.
7. Marked tenderness on deep pressure over the site of pain.
8. X-ray is of little or no value in early stages.

Prognosis. Prognosis as to limb is about one hundred per cent. bad. As to life there are but few available statistics, but death is quite common. Schurer-Waldheim reports six fatal cases that died in from three to six days after onset.

Prompt and intelligent treatment offers an early return of function, conservatively estimated to be within three months.

Neglect and inadequate treatment produce a convalescence of a year to many years, often resulting in the loss of limb or chronic invalidism or both.

This disease probably destroys and disables more limbs than any other known.

Enlightenment of both physicians and the public concerning the seriousness of acute osteomyelitis should be greatly stressed.

Treatment. The next generation will witness the passing of the last of the acute infectious diseases and the various focal infections should

be so wisely treated that acute osteomyelitis would become one of the conquered diseases.

The treatment of this dreaded disease is always one of the most definite surgical emergencies in every instance and prompt rational operative procedures must take precedence over all other considerations. Time is all important and a few hours' delay may mean the sacrifice of a limb or a life.

The treatment of acute appendicitis, cholecystitis or fractured bones may well be postponed for a few hours but not so with acute osteomyelitis.

Soft tissue infections progress toward early localization, are treated conservatively, respond promptly to drainage, while the prevailing tendency in acute bone infections is distinctly opposite. Localization is not to be expected, wide extension and wholesale destruction are the rule. Conservative treatment brings disaster. Prompt incision, with removal of sufficient bony cortex to provide for exit of the inflammatory products, is rational. Thus certain principles maintain in the treatment of acute bone infections, but each case presents its own problems.

John Hunter in 1787, Brodie in 1846, Ollier in 1877, Senn and Bryant in 1879 all recognized the importance of early and wide incision of soft tissue and excision of bony cortex to obtain good results.

In more recent years other authors have stressed these points while still others have favored a conservative course.

In the light of our present knowledge of this disease there remains but slight excuse of any case not receiving radical and intelligent treatment within the first forty-eight hours after onset.

Wide incision of soft parts and extensive removal of bony cortex without destruction of the medulla is safe and sufficient in the acute stage of osteomyelitis.

DISCUSSION

Dr. C. George Appelle, Champaign: The essayist has given us a very good paper on acute osteomyelitis. Therefore, I will not burden you much but will make my remarks very brief, very simple and very direct. In contrast to the dramatic onset which the essayist has related to you, I wish to call your attention to the fact that not infrequently these cases have a very undramatic onset and with very disastrous results. I am not convinced that those cases with a dramatic

onset are apt to give a more disastrous result than those whose onset is undramatic. To be a little more specific, a boy works on a farm for two or three weeks complaining of more or less pain and disability in the region of the shoulder. It is treated with household remedies and finally comes to operation as an osteomyelitis of the humerus. This sounds like a very undramatic onset but nevertheless, it was a case of osteomyelitis. Another case returns from school complaining of a little pain in the region of the groin, so insignificant that it is not regarded seriously for a week when severe nose bleed sets in. At this juncture the course becomes more dramatic and the case turns out to be one of very extensive osteomyelitis of the femur. These undramatic cases we are prone to call rheumatism and somewhat plausibly because almost always in these young people the lesion is near a joint. But as a counter balance to this fallacy just ask yourselves: "How many cases of monoarthritis have I seen in children?" These remarks are not by way of criticism of this excellent paper but rather to guard against the obsession conveyed in our schoolday lectures on osteomyelitis that there must be a dramatic onset so that when we see other onsets we are likely to overlook the true situation.

I want to emphasize how to use the x-ray in the diagnosis of acute osteomyelitis. It does not make any difference how early you see a case of osteomyelitis, whether in four or twenty-four hours, you should take an x-ray picture. However, even if the x-ray is negative it should have no influence as to how you are to proceed, always feeling sure that perhaps a simple incision and an opening into the cortex is not going to do as much damage as if you let a case of that kind go on without some such simple procedure.

The treatment has also been very excellently covered. Prompt drainage is necessary. In a case where the diagnosis is made early, perhaps very little is necessary in the way of destruction of the cortex. Perhaps a few simple drill holes will take care of it, but of course, where we see one of this kind we see several in which this is not adequate. However, you should never go into a case of osteomyelitis where there is extensive involvement of the marrow cavity, make a few simple drill holes and get out, and imagine that you have accomplished very much. I will grant that sometimes all you ought to do is to make a simple incision for emergency drainage. A good rule is to meet the indications as the situation seems to demand and complete the operation at your leisure under more favorable circumstances. Another thing which I think is significant in the treatment of some of these cases and that is the material used for drainage and the dressing. Ordinary rubber tube drainage appears to me to be inadequate. Other than this I do not know that it makes a great deal of difference what kind of drainage or dressing you use except that the vaseline gauze pack of Orr is perhaps the most comfortable and convenient. It is most easily applied and most satisfactory as to the frequency of change. It

matters not whether the disease involves the marrow extensively or the circumference of the bone, this dressing serves equally well. It is not imperative that a cast be applied and left on for six weeks without changing the dressing. You may change it every week if you see fit. Certainly some cases fare better under such management.

Fixation is important on two counts; the immediate comfort of the patient and subsequent disability. No one should presume that it is necessary to put every case into a cast. As a matter of fact, sometimes, body cast fixation is distinctly contraindicated. Some of these patients are in such a depleted condition that they will do poorly in a cast. Many of them have sufficient support in the bone itself that you need not worry about any immediate deformity of the limb. Apply such supporting apparatus as will give the greatest comfort and make the care of the patient reasonably easy. I should advise against a body cast in any severe, acute case because of the added handicap to an already profoundly depressed state. If all goes well you will have plenty of time later to apply a cast. Some cases can be handled from start to finish without the use of a cast, with good end results so far as the patient is concerned.

Dr. E. H. Ochsner, Chicago: I think Dr. Harger's report is very opportune. It is a very strange thing that every generation of physicians has to re-learn many of the things that previous generation of physicians had already learned. When I was an intern in the Cook County Hospital the general practice there was very extensive chiseling even in the acute stage and many of the cases either died from general sepsis because of too extensive operation or eventually lost the extremity. I saw quite a number in both of these groups. Shortly after that we learned that in acute cases if one gets them early enough all that is necessary is a wide incision of the overlying soft tissues and of the periosteum. I daresay if one gets the cases early chiseling is not necessary, and even the use of the gimlet is not necessary. I would say to the last speaker that a case that has to have four or five operations either comes too late or is not properly treated in the first instance. Whenever these repeated operations are necessary one of these two things has invariably happened. I do not see an acute case of osteomyelitis without my intern saying to me, "Why do you not chisel into the bone?" Nine times out of ten it is not necessary. By making an incision over the skin and an incision into the periosteum right over the point of tenderness, the patient will recover without the formation of a sequestrum in a considerable percentage of cases and in the remainder the sequestra can be removed at a later operation.

One more thing, that is the question of the x-ray. The second speaker said, take an x-ray. Yes, if you can take an x-ray without the parents knowing it, take it in the first twelve hours. If you cannot do

it without the parents knowing it, do not do it, because they will ask you every time, "What did it show?" I never mention x-ray. I say that the patient has an osteomyelitis and it has to be operated on at once. I take the patient to the hospital and operate. I have seen cases where the x-ray resulted in delay and consequent great harm to the patient.

Dr. John R. Harger, Chicago (closing the discussion): Dr. Appelle made some very pertinent points. The dramatic onset of all acute infections depends on the virulence of the organisms and the resistance of the patient. In some of these cases the onset is very mild, but they are sure to progress and tend to destruction.

Regarding the x-ray, I like to have an x-ray for my case record. In the first case shown here the x-ray revealed nothing. Later on we obtained a picture showing findings, and so we had something definite and we knew the changes that had taken place. The x-ray for record is the reason I want it. On the other hand, because the x-ray did not show anything the parents hesitated about operation and the internist did likewise.

Speaking of incision, I like to make a wide incision in the soft tissues. I sometimes think an incision down through the periosteum is sufficient, but you cannot tell in all cases when you get through the periosteum whether that is enough. I do not destroy the medulla. I have at the present time a case at the County Hospital where the boy has a complete destruction of the tibial shaft because the first man who opened it simply went into the periosteum.

Speaking of the Orr method, I believe he has told us a great deal about drainage in surgery. I have known Orr since I was a student and I take him seriously. I am using vaseline gauze in lots of other places. I think it is a good thing. In small sinuses I always use vaseline gauze. In the acute cases I do not pack it in very tight.

Regarding fixation, I put a plaster cast on every one of these patients. Make it wide open, put on a handle so you pick the boy up and carry him around the ward, and he is perfectly comfortable. It prevents deformities, it relieves pain and puts the limb at absolute rest.

This case of infection of the upper end of the femur brought up a very serious question to me. There are a lot of cases reported in the literature at the present time of an acute epiphysitis. I am wondering if those cases are not like my case where the process was on the diaphyseal side before it was up in the joint. I have a patient under my care at the County Hospital with quite a little involvement of the neck of both femurs, bilateral ankylosis. In one the process has gone down below the trochanters. I believe in this case the process was not in the epiphysis primarily. I believe originally it was in the diaphysis and found its way, because of the capsular ligament, into the hip joint.

HERPES ZOSTER, SOME REMARKS ABOUT ITS TREATMENT*

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Herpes zoster is characterized by an eruption of reddish patches, of varying sizes and shapes, which are almost always surmounted by groups of vesicles, limited often to the territory of a single nerve and unilateral save in very rare instances. Its evolution is cyclical and it seldom recurs. The lymph glands adjacent to the affected areas are practically always enlarged, sometimes even before the appearance of the eruption. Pain is often intense, being burning or neuralgic in character. The patches are often hyperesthetic. In older persons the pain may persist for months after the healing of the skin lesions. Aberrant vesicles have been observed, but Darier, who has made a special study of them believes them to be a rarity. Since pain is the chief symptom its relief is the most important indication. The large number of remedies which have been suggested shows that no one of them appears to be successful in all cases.

I shall not consider all of the treatments which have been employed, but shall limit myself to a discussion of the more recent ones. Schamberg, Darier, Milian and Alderson are among those who have recommended deep x-ray therapy. Howard Fox¹ has seen good results after the local application of a paraffin mixture. Jacobson² in twelve cases obtained satisfactory results by the daily use of a 1000 watt red globe, for twenty minutes each time. From two to six such applications healed the cutaneous lesions and removed the pain. Ultra violet has also been valuable. Ruskin³ was successful in a case of herpes zoster affecting the right ear drum, with the use of a 10 per cent. cocain solution applied to the corresponding sphenopalatine ganglion. Vendel⁴ of Copenhagen recommends the subcutaneous administration of pituitary extract. Sutton, in the recent edition of his text-book, found it of little value. Duke⁵ favors the subcutaneous injection of epinephrin which he believes to be of distinct value for the relief of

pain in zoster; 0.50 c.c. is given every five minutes until the patient is relieved or until a distinct tremor appears. This agent has little effect upon the skin lesions. Galliot⁶ treated two cases of zoster occurring in old syphilitics with intramuscular injections of bismuth, with good success. In the ensuing discussion before the French Dermatological Society Schulman emphasized the importance of syphilis as a possible etiological factor in the production of herpes zoster. He referred to its occurrence after the use of arsenical preparations in the treatment of syphilis and stated that in his opinion such zoster are really neuro-recurrences which will respond to further anti-luetic therapy. Sezary, referring to the cases of Galliot, believed that they represented an awakening of the unknown zoster virus under the influence of the bismuth. Lhermitte and Kyriaco⁷ have presented before the Paris Neurological Society a report which emphasizes the role of syphilis in zoster. In thirty-three cases of herpes zoster they found that lues was present in twenty-four of them. After a striking result in a case of zoster occurring in secondary syphilis Milian recommends the intravenous use of Neo-Arsphenamin and quotes five zoster, in those apparently free from syphilis, in whom this drug gave excellent results. A 0.30 gm. dose usually afforded considerable relief, even dissipating the pain entirely in several cases. Relief from pain was noticed even within three or four hours. From Montpellier comes the report of a quick cure in a very painful zoster by the intravenous injection of iodobenzomethylformine.⁸ The pain disappeared twenty-four hours after the initial treatment. Treatments were given daily for four days and by that time the skin lesions had largely faded away. This result, the abstract states, is confirmatory of the results gotten by Ganzinotty. Benard and Joltrain⁹ obtained good results in eleven out of fourteen zoster by the intravenous administration of the strongly sulphurous but isotonic water from the springs at Uriage, France, in 10 c.c. doses.

In 1923, Ravaut¹⁰ and a little later, Spiehoff,¹¹ were the first to employ autohemotherapy for the treatment of skin diseases. This procedure consists in the withdrawal of venous blood just as for a complement fixation test, followed by its immediate injection into the patient's

*Read before the Aux Plaines Branch, Chicago Medical Society, March 1, 1929.

gluteal muscles, preferably those of the upper and outer quadrant. The amount of blood used varies from five to twenty cubic centimeters, the first named amount being suitable for children. More than twenty cubic centimeters is apt to cause considerable pain and one-half of that is the usual adult dose. As a rule, these injections are well borne, a slight fever or pain at the site of injection being occasionally noted.

Spillmann and Raspiller¹² of Nancy, in 1923, first employed this method in the treatment of herpes zoster, with uniformly good results. In six of their seven cases the first injection caused an almost complete cessation of pain and a rapid clearing up of the eruption, the vesicles drying up in from twenty-four to forty-eight hours. The results were especially gratifying in two patients aged seventy and seventy-one years, respectively. None of their patients suffered from postzosterien neuralgia.

Parisot and Simonin,¹³ Drouet and Vernier¹⁴ and Etienne, all of Nancy, have likewise reported excellent results from this same treatment in zoster. Drouet and Vernier first treated ophthalmic zoster in this way and they were very successful. Their patient was given five autogenous blood injections at two-day intervals, the dosage ranging from five to twenty cubic centimeters, the latter amount being given twice. The first injection removed the photophobia and after the third one the cornea had largely cleared. Six days later it had regained its normal transparency.

Wintzer¹⁵ of Nantes has reported most gratifying results from autohemotherapy in eighteen cases of herpes zoster, two of them with ophthalmic involvement. He treated two instances of post zosterien neuralgia with this same method but without success, even though one patient received seventeen such treatments.

In discussing the results obtained by Bernard and Joltrain, Sicard said that such treatments as the use of autogenous blood could give remarkable results in zoster, but that it must be used early, preferably during the first seven to ten days. If not used until later neuralgia is apt to follow.

Barrio de Medina¹⁶ of Madrid, Spain, has also used autohemotherapy with success in herpes zoster.

Personal results. I have treated eight cases

of herpes zoster solely with herpes zoster and the results in seven of them were excellent.¹⁷ In the last case the treatment was instituted a little too late, which probably accounted for the failure. The usual dose was ten c.c. of autogenous blood, given every three or four days. Only the last case showed any post zosterian neuralgia. In several patients the initial treatment entirely relieved the pain and brought about a quick evolution of the skin lesions. In two of them aged sixty and sixty-five, respectively, with very severe pain and extensive skin involvement, three injections given within ten days effected an almost complete cure. I have also noted a favorable effect upon the enlarged lymph glands following autohemotherapy. The effect upon the pain is more rapid, however, often causing its disappearance within twenty-four to forty-eight hours. All of my cases were treated early save the last one.

Theories regarding the action of autohemotherapy. Wintzer believes that the various theories concerning it are based on sensibilization or desensibilization. It is thought to be a form of protein therapy by some. Wintzer states that the leucocytosis which it produces plays an important role, but that the mechanism of this procedure is not yet entirely understood. Raspiller has compared its action to that of a peptone. Moutier and Rachet¹⁸ showed that it produced a hemoclastic reaction in eleven out of fifteen patients. This was followed by a hyperleucocytosis within one hour. Paillard¹⁹ has suggested that the venous blood which is injected into the cellular or muscular tissue is slowly absorbed by the lymphatics and that perhaps this passage through the lymphatics produces favorable defense reactions. Spillman is joined by Louste, Thibaut and Barbier²⁰ in the belief that autohemotherapy should be classed with the methods of nonspecific desensibilization.

Conclusions. Autohemotherapy is deserving of wider recognition in the treatment of herpes zoster by reason of its simplicity, apparent freedom from serious reactions and because of its good effects in a number of such cases.

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THE PHYSIOLOGY OF THE EPIDIDYMS

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What is the function of the epididymis? While many observations have been made by various investigators, the final purpose has not, as yet, been attributed to this seminal duct. In animals, who possess no seminal vesicles, the epididymis apparently functions in three ways, as follows:

First: As a reservoir for the products of the testis.

Second: In the capacity of a duct or tube for the passage of male sperm and testicular fluids.

Third: As a secreting gland.

In order to verify the first and second func-

tions, we have but to study the quadrupeds. Frequently, there are revealed collections of spermatozoa in the epididymis, particularly in the tail, which obviously assumes the role of seminal vesicle in the lower animals.

The ornithorhineus, or duck-mole, a small oviparous mammal of Australia, does not possess any seminal vesicles. Here we find the lower end of the vasa deferentia considerably enlarged, no doubt to compensate for the entire absence of seminal vesicles.

In the human, aspiration of the epididymis, or one of its aberrant ducts (spermatocele) discloses that here also the organ functions as a reservoir and duct.

Among the monotremata, including the anteater, hedgehog and duckbill, the seminal vesicles are absent. Birds also are devoid of this organ. Other seminal glands, such as Cowper's, the prostate and epididymis, assume this role. This ability of one gland to substitute for another is particularly marked in the civet cat, in whom we find Cowper's glands enormously enlarged to provide for the total lack of seminal vesicles; and in the guinea pig the converse is true. Apparently, there is something in common. then, among this group of sex glands.

The glandulae seminales in the white rat are two large sac-like structures usually possessing one chamber but occasionally partitioned off into several. They are in no way connected with the epididymes and open by individual ducts into the posterior urethra. Their function is apparently purely secretory.

The pelvic and anal glands among certain of the batrachians swell up during the procreative season, and discharge their secretion into the cloaca. These glands are supposed to represent the prostate and glands of Cowper. This congestive phenomenon has been observed in snakes, birds and mammals, who have a rutting season and includes the epididymis which increases greatly in bulk, its lining cells becoming more numerous and larger and its contents greater during the mating term; and with the passing of this period, the substances are expelled, its bulk and secretion subsiding to the antenuptial dimensions.

The epididymis of man, whose mating season includes at least 365 days each year, does not

present seasonal variations; yet how similar the swelling, tenderness and even pain in the organ following prolonged ungratified sexual excitement. Is there, then, a stimulated activity, an increased accumulation of secretion to such proportion as to cause overdistention, tenderness and even pain! This is not an uncommon occurrence, and the Germans picturesquely describe it as Bräutigams epididymitis.

In the human who does not possess other secretory glands, in addition to the prostate and Cowper's, why can we not assume, after studying the comparative anatomy, and after noting the similarity between the mating season in the lower animals and the increased activity of the epididymis during the prolonged ungratified sexual excitement that this organ has a secretory function?

In other animals, in the absence of special accessory glands called glandulae seminales, either Cowper's, the prostate or the epididymis assumes a secretory activity. The human seminal vesicles are not secreting glands. The prostate and glands of Cowper in the human are not particularly large compared to these glands in lower animals.

Belfield and Rolnick, working on the seminal ducts, found that following the injection of various colored chemicals, the body of the epididymis was colored, and thereby concluded that it functioned like other secreting glands as an excretory organ of certain foreign substances introduced into the blood.

Why, then, in view of all this evidence we have a secretory power of the epididymis in lower animals can we not conclude that the epididymis in the human is invested with a similar secretory function?

From the Nelson-Morris Institute of Research, Michael Reese Hospital.

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MASSIVE UNILATERAL HYDRO-NEPHROSIS*

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I have selected for discussion a study of thirty-three persons in whom there was found a large unilateral hydronephrosis not associated with renal or ureteral stone, neoplasm, tuberculosis or abnormal renal mobility.

The etiology of this condition is, and has been, the occasion of continued controversy on the part of both pathologists and clinicians. The three theories which are advanced to explain these large renal pelvis dilations are, in brief: Deficient or improper drainage, due to obstructive factors of a mechanical nature; a congenital localized tissue overgrowth resulting in an excessive and abnormally large renal pelvis; a congenital or acquired abnormal or deficient innervation of the renal pelvis which results in an alteration of the physiologic activity of the renal pelvis with subsequent dilation.

This small, but carefully selected group of patients has been analyzed in an attempt to add to the correlation of etiology and therapeutic consideration from the standpoint of the clinician. All were seen in the past nine years.

Age. The youngest was fourteen years of age, the oldest sixty-five years.

10 to 20 years.....	5
20 to 30 years.....	14
30 to 40 years.....	7
40 to 50 years.....	4
50 to 60 years.....	2
60 years.....	1

Sex. Twenty-two were men and thirteen were women.

Location. The right kidney was affected in twenty-one, the left in fourteen.

Duration of Symptoms.

More than five years.....	6
Less than four years.....	2
Less than three years.....	3
Less than two years.....	12
Less than one year.....	10

Character of Symptoms

Subjective. In twelve there was frequent intermittent acute lumbar pain, radiating to abdomen groin, perineum or thigh.

Eleven gave a history of dull renal or lumbar

*Read at Peoria, Illinois, before Section on Surgery, Illinois State Medical Society, May, 1929.

pain or discomfort without radiation to abdomen, groin or thigh.

Seven complained of localized or vague abdominal discomfort without lumbar or referred pain.

Two had never had pain at any time, their symptoms being fatigue, drowsiness and anorexia.

One had experienced pain solely in the mid-pelvic and vaginal region.

In none was there a history of pain radiating to the shoulder or upper costal region.

The onset of pain was most variable. Thirty placed no connection between the pain and type of diet, exercise, bowel movement or other activity.

In three the pain was markedly aggravated by exercise or manual labor.

Urinary Symptoms. Intermittent attacks of frequency of urination was a complaint of seven. Three stated that there had been slight dysuria with occasional urgency. In twenty there had been no subjective symptoms referable to the urinary function.

Objective Symptoms. Three gave a history of elevated temperature on occasions associated with pain. Palpable lumbar or abdominal tenderness had been present in twenty-two. Four patients had palpated a mass in the abdomen.

The urine findings were normal in twenty-six.

Albumin was present in the urine of five, pus in six, erythrocytes in three, and a frank hematuria in one.

Urine cultures from the hydronephrotic side yielded bacillus Coli in four; B. Coli, staphylococcus and streptococcus in one; and staphylococci alone in one.

Cystoscopic Findings. The bladder was normal in twenty-four. In nine there was hyperemia of the trigone or bladder mucosa.

Renal Function. As tested by phenolsulphonphthalein or indigo-carmin injected intravenously all of the thirty-three kidneys showed a retarded appearance time and quantitative output of the dye. In eight no trace of dye appeared in thirty minutes.

An attempt was made to estimate the amount of retained urine by aspiration with a special syringe after ureteral catheterization.

In twenty-six a free aspiration of abnormal

quantity was obtained. The largest amount so aspirated was 3800 c.c. and the smallest was 90 c.c.

Diagnosis. The positive diagnosis was made by ureteral catheterization, aspiration of the pelvic content, lowered output of dye on the affected side, and by pyelographic outline. An enlarged shadow suggesting kidney outline was noted on the uninjected plates in fourteen instances.

The pyelographic outline showed the dilation confined to the pelvis and calices in twenty. There was dilation of the ureter, pelvis and calices in thirteen. Of these latter the region at which the dilation apparently commenced was the upper third of the ureter in three, the mid-ureter in six, and the lower ureter in four. In ten patients the emptying time of the renal pelvis and ureter after filling with opaque medium was determined. The opaque material remained long enough to cast an outlining shadow for from twenty minutes to thirty-six hours. (The normal emptying time is usually from five to ten minutes.)

Treatment. Nephrectomy was done in eighteen.

Ligation of anomalous vessels (where a bipolar blood supply was not present) and nephropexy seemed adequate in two.

Partial resection of the pelvis and re-implantation of the ureter was done in two.

Progressive ureteral dilatation by bougies through the cystoscope was the only treatment in nine.

Pathology. 1. Based on observation at operation together with examination of the extirpated kidney.

(a) Dilatation *without* evidence of extra or intramural mechanical obstruction—*two*.

(b) Narrowing of uretero-pelvic juncture or ureter without anomalous vessels—*seven*.

(c) Apparent obstruction at uretero-pelvic junction associated with pressure of anomalous vessels—*eight*.

(d) Abnormally high insertion of the ureter into the pelvis—*one*. In this instance there was no constriction of the uretero-pelvic juncture and the distorted position of the outlet may have been secondary to a condition such as found in (a).

2. Pathology as diagnosed by roentgenograms in patients not operated upon.

(a) Obstruction at uretero-pelvic region—*seven*.

(b) Ureteral narrowing (stenosis or stricture?)—*eight*.

Results. In the eighteen nephrectomized patients there have been no further complaints to date. One patient in whom ligation of the anomalous artery and nephropexy was performed is completely well symptomatically, but I have never been able to re-check the renal function or the pelvic outline. The second patient subjected to this procedure had partial relief for one year but returned for check-up which showed improved renal function as tested by dye, decrease in pelvic retention from 180 c.c. to 40 c.c., but a delayed emptying time of thirty minutes. No pre-operative test of emptying time had been made. The ureter was progressively dilated to 14 F. with complete relief of pain for periods of three to four months. The renal function has continued to improve as tested by dye output but a permanent cure has not been obtained.

Both patients in whom resection of the pelvis and transplantation of the ureter was done have had complete relief of pain. Unfortunately I have not been able to study either of these patients postoperatively, although it is four and two years respectively since operation.

Of the *nine* patients in whom progressive dilatation of the ureter to 12 or 14 F. was the only method of treatment, five are completely relieved of pain after six years, four years, four years, three years and two years respectively. I am sure of the condition of these patients because they continue to report at intervals. Two, still under my observation, have been partially relieved by bougie dilatation but present themselves for further treatment at four to six months intervals. To one of these I have repeatedly advised nephrectomy but she refuses on the ground that she is better than she was four years ago. Another patient claims complete relief from dilatation when the interval is not longer than three months. This despite the fact that the kidney function has improved to within normal limits and the pyelogram shows marked contraction.

One patient in this series has not been seen

or heard from for two years. He refused a plastic operation and had no relief from dilating the ureter to 10 F. He has probably been readvised elsewhere.

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CLINICAL EVIDENCE ON THE QUESTION OF MOVABLE KIDNEY*

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Definition: Every kidney is normally movable, making its excursions up and down with respiration or with movements of the body. But when that mobility is extreme, or when the kidney be-



No. 1. Nephroptosis with Pyonephrosis.

comes displaced and remains in its abnormal position it enters the domain of pathology and is usually, though not always, accompanied by a train of symptoms, pains and reactions that

*Read before Section on Surgery, Illinois State Medical Society, at Peoria, May 21, 1929.

should be readily recognized by one versed in the subject. Such mobility is termed movable kidney, loose kidney, ptosed kidney, floating kidney, or nephroptosis. The term floating kidney is used to designate the severely movable organ that is more or less enveloped by peritoneum, thereby possessing a mesonephron, and hangs especially loose in the abdomen.

Movable kidney seems to have had a variable career in the estimate of the profession in the comparatively short time since Glénard, in 1885,

relief to the suffering humanity whom it afflicts; and, further, that such correction is both effective and enduring.

We have never had a relapse in any case in which we have operated. And many others have been given relief by abdominal binders to such a degree that they have declined operation as being unnecessary.

Diagnosis: We have abandoned as unreliable the practice of resting our diagnosis on abdominal palpation for confirming the suspicion of movable kidney. We utilize the much more positive method of injecting the kidney pelvis and ureter with sodium iodide solution for ureteropyelogram, first while the patient is lying down and next while she is sitting up. The comparison between the two shows definitely the amount of excursion which the suspected kidney makes up and down in the two positions, and also any deviations in the caliber of the ureter or kidney-pelvis, kinks, angulations, etc., of the former, and distention or enlargement of the latter (hydronephrosis, etc.). If this practice were followed probably fewer cases would be operated on for appendicitis in which the real cause of the pain is a ptosed kidney with kinked and obstructed ureter.

Symptoms: A complete review of symptoms connected with movable kidney would consume many pages and is impracticable for this paper; but they relate to disturbances of the alimentary tract, liver, nervous system, urinary and pelvic organs, general health, mental conditions, back-ache, melancholia, etc. And in our cases they have varied in duration from one to twenty-five or more years, so severe in many instances as to require the repeated use of morphin. While we have the complete records of forty-five cases relieved by various methods, a few typical cases are herewith presented in which the radiographic and clinical evidence is clean-cut and indisputable. In addition to the pyelographic evidence acquired before operation, the actual condition is again checked up *after* operation, the result of which will be shown in individual cases.

Some typical cases are the following:

Mrs. C. Hopkins, aged 54, referred by Dr. Wm. H. Vogt, St. Louis, April 10, 1928. Symptoms eight years. Pain in right renal region and severely painful urination. Slide: (Fig. 1.) Right kidney opposite pelvic brim; obliterated calyces, dilated kidney pelvis and ureter. "Thalein function only 2% in thirty minutes,



No. 2. Same case as No. 1 four weeks following nephropexy showing kidney in proper place and restoration of normal markings of calices and ureter.

described it and its various sequences. For a time nephropexy had a vogue amongst many of the profession, and a large number of operations and methods for its correction were submitted. Either because these proved ineffective in numerous instances or because diagnoses were incorrect, failures in considerable number were recorded and a bad impression resulted. And latterly many surgeons have discontinued such work and some even decry it. In view of the clinical and radiographic evidence herewith submitted we believe this view to be unjustified and that the proper correction of malposed kidney offers wonderful

showing the damaged state of this kidney. Nephropexy, May 3, 1928. Pyelogram (Fig. 2) taken a month later showed the kidney in its normal position with its calyces restored and the pelvis reduced to a normal size; the ureter straightened. The patient had meantime been relieved of symptoms and was on the road to renewed health and weight—for the first time in eight years.

Mrs. J. Schroeder, aged 52, referred by Dr. L. M. Riordan, St. Louis. Symptoms ten years, attacks of pain, nausea and vomiting. Pyelogram before and after operation showed (a): Hydronephrosis and ptosed right kidney; kinked and obstructed ureter, (b) after operation; kidney restored to its proper position; pelvis in correct position for good drainage, decreased in size, ureteral kink removed.

An even more marked case is that of seventy-year old Mrs. Keiner who suffered for more than twenty years with supposed "lumbago," eventuating in attacks so severe as to require morphin hypodermics repeated for several days and nights. The attacks simulated those of renal colic. She was in one of them when I was first called called; and was writhing in the bed, with many excited members of the family standing about.

A ureteral catheter passed readily into the right kidney pelvis, draining out an ounce of foul, infected retained urine. Relief from the agonizing pain was immediate. A pyelogram taken with the patient lying down is shown in slide No. 5, revealing the kidney in its proper position but with dilated pelvis; while slide No. 6 shows the pyelogram with the patient in the upright position. The kidney has dropped nearly to the brim of the pelvis, with the kidney-pelvis dilated into a nephrotic state, the plain evidence of chronic obstruction and back-pressure that caused the pain. Nephropexy, October 22, 1928, gave entire relief and restored the general health—after twenty years of suffering.

The history of a little girl, Evelyn Organ, four years of age, is of great interest. Her physician, Dr. Joseph Costello, St. Louis, said she had suffered from pyelitis, with pain in the left side, infected urine, chills and fever and bad health for the most of her young life. Her youthful age did not deter us from making the required cystoscopic and x-ray examination, the result of which appears in slide No. 7. The left kidney was shown ptosed down into the pelvis, the ureter congenitally shortened to a degree that prevented all thought of restoring the kidney to its normal position in the flank. So no operation was considered; but cystoscopy, ureteral catheterization with dilatings and lavages were repeatedly carried out in our office on the little four-year-old girl, under local anesthesia and without a murmur—except one day when she protested because she was "getting hungry." Recovery followed in about two months.

The calamitous result of neglecting to attend to ureteral obstruction from ptosed kidney is shown in slide No. 8. Mrs. Weed, aged 52, suffered for twelve years with agonizing pain in the left side, notwithstanding her faith in the efficacy of Christian Science for relief. At the end of the twelve years her left kidney had been

so destroyed by back-pressure and infection that it was a mere septic pus-sac, and required nephrectomy without question. Relief followed the operation, but the thought intrudes itself as to how much better it would have been to have detected, corrected and *saved* the mal-posed kidney twelve years before it had to be removed. The worst situation of this sort I have ever seen was that depicted by slide No. 9, of a young bride, twenty-three years old, whose right kidney had been removed surgically a year before I saw her. What she had to depend on for renal excretion was the one dilated, pyonephrotic kidney shown in the slide, together with the dilated, kinked, strictured, looped and angulated ureter pictured. The sword of Damocles was as



No. 3. Pyelogram taken with patient in prone position.

nothing compared to the perilous position of this little bride. Her one kidney was almost inert and functionless, and had for drainage a monstrosity of a ureter, malformed and strictured to the Nth degree. Nephrostomy was the only thing left for this case. Early conservative surgery would doubtless have saved the situation.

Slides No. 10 and 11 show Kelly's method of suturing the kidney into its proper position: A chromic 20-day catgut suture including a triangular portion of the kidney on its posterior aspect, the ends passed up under the 12th rib and out through the intercostal muscle and tied together with the kidney placed high in its fossa. Two other sutures are similarly placed and passed

through the quadratus lumborum muscle, posterior margin.

CONCLUSIONS

1. Movable kidney is a reality both clinically and pathologically and demands prompt recognition and appropriate measures of relief.

2. Such recognition is to be based on the modern methods of examination described.

3. Diagnosis requires proof on two points in particular: (a) As to the presence of unduly movable or displaced kidney. (b) As to whether the symptoms complained of are coming from this displacement or mobility.

4. Methods of relief are both palliative and surgical: Abdominal binders and nephropexy, the latter affording permanent results when properly carried out.

5. Binders are effective only as long as they are worn, no cure or permanent relief being afforded by them.

6. The "fattening" methods of treatment offer no probability of success and are pure waste of time.

7. No operation in surgery affords a greater measure of relief in proportion to its simplicity and safety than does nephropexy properly applied and carried out. Some husbands commend it as preferable to exchanging old wives for new.

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DISCUSSION

Dr. E. H. Ochsner, Chicago: I am very glad to hear Dr. Lewis' paper. I have practiced surgery long enough to know that twenty or thirty years ago a good many people had nephropexy who did not need it and consequently received no benefit from the operation. They simply had a movable kidney and the symptoms were caused by appendicitis or gallstones. I think it was because of the fact that many patients were operated upon who did not need operation that nephropexy got into disrepute. We now have a definite means of finding out whether a movable kidney is giving trouble and if there is definite kinking of the ureter with consequent urinary stasis an operation is certainly indicated.

I would like to ask Dr. Lewis whether he believes that simply scarifying the capsule is as good as splitting it and reflecting it, and possibly rolling it up as advised by Edehols.

Dr. Bransford Lewis, St. Louis, Mo. (closing the discussion on his paper): It is very gratifying to hear these expressions and I thank Dr. O'Connor and Dr. Ochsner in particular for expressing what I wanted to say, that the tide has turned because we now have modern and exact methods of diagnosis, based on which we can advise certain plans to be followed. They used

to guess and look wise and say, "It is a movable kidney." But that guessing method has been thrown out and the diagnosis now rests on exact methods of cystoscopy and radiography. I have presented this subject on several different occasions in several different localities and it has always been received at first with skepticism but later with conviction that I was right.

The conclusions are based on the definite, positive and conclusive evidence in regard to diagnosis; and in the second place, the efficacy of the operative methods utilized.

SEPARATE ADDITIONAL LIST OF SLIDES

12. Mrs. Baer, aged 47. Arrived May 28, 1928. Marked ptosis, kinking at uretero-pelvic junction. Symptoms six years. Binder, relief.

13. Mrs. Thornburg, aged 44. Arrived in 1925. Symptoms



No. 4. Same case as No. 3 with patient in upright position showing ptosis of kidney with resultant kink of ureter. Corrected by nephropexy.

five years. Ptosis; kinking of ureter (right) and strictures. Binder, relief.

14-15. Mrs. Lee, aged 46. Arrived Aug. 27, 1928. Symptoms twelve years. Ptosis right kidney (14) accentuated by erect posture (slide 15) with marked kinking of ureter, dilated kidney pelvis. Nephropexy gave complete relief.

16. Mrs. Linton, aged 61. Arrived July 28, 1928. Symptoms eight years. Marked ptosis and kinking. Relieved by nephropexy.

17. Mrs. Ryan, aged 51. Arrived Sept. 24, 1928. Symptoms five years, growing more intense all the time; invalidism. Marked ptosis and kinking. Relief and restoration by nephropexy.

18. Mrs. Muenteferring, aged 29. Arrived Aug. 28, 1928. Symptoms five years. Ptosis left kidney, hydronephrosis, marked kinking. Nephropexy and relief.

19. Mrs. Pansy Gibson, aged 38. Arrived May 22, 1926. Symptoms a year but rapidly growing worse. Ptosis, hydronephrosis, marked kinking. Completely relieved by nephropexy, June, 1926.

20. Mrs. Lemex, aged 51. Arrived Oct. 20, 1926. Symp-

toms five years. Marked ptosis, hydronephrosis, invalidism. Relief from nephropexy Nov. 21, 1925.

21. Mrs. Roe, aged 35. Arrived Dec. 12, 1927. Symptoms two years, but destroyed left kidney (pyonephrosis) ptosis, kinking. Relief from nephrectomy, Dec. 23, 1927.

22. Mrs. Higginbotham, aged 58. Arrived Feb. 19, 1929 (No. 1). Prone. Right ptosis, hydronephrosis.

23. Mrs. Higginbotham (same). Upright, kidney down in pelvis. Nephropexy.

24. Miss McCormick, aged 22. Arrived Feb. 21, 1929. Symptoms three years (No. 1). Upright. Hydronephrosis with kidney at brim of pelvis.

25. Miss McCormick (same) No. 2. Four weeks after nephropexy, kidney in proper location, its pelvis recovering proper contour. Recovery.

26. Mrs. Della Tate, aged 36. Arrived May 1, 1929. Symptoms eight years. Operations without relief ("Irishman"). Marked hydronephrosis and sharp kink, agonizing pains.

THE DISTURBANCES OF URINATION IN THE FEMALE CAUSED BY LESIONS OF THE LOWER URINARY TRACT

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This paper has been limited to the lesions of the lower urinary tract because time would not permit the inclusion of upper urinary tract pathology.

The common disturbances caused by lower urinary tract lesions are frequency, urgency, dysuria, pain, hematuria, pyuria, and incontinence.

A fair percentage of women are disturbed by one or more of these symptoms, either intermittently or continuously. This is due to: 1. The rather common lesions of the genital tract which disturb the urinary act. 2. The exposure of the urethra and secondarily the bladder to trauma and bacterial invasion. The trauma resulting from instrumentation and labor are only too common and the exposure of the urethral mucosa to the flora of bacteria which inhabit or gain entrance to the vagina is well known.

The limited sphincteric action in the female and exposure of the single sphincter to trauma also explains the frequency of urinary disturbances in their sex as compared to the male. In addition to these anatomical conditions, the female is subject to practically all of the lesions found in the male excepting those of the prostate gland and seminal vesicles.

These urinary disturbances may be caused by:

1. Lesions outside the urinary tract.
2. Lesions in the urinary tract.
3. Lesions caused by faulty innervation.

Of lesions outside the urinary tract the following may be mentioned:

1. Cystocele and uterine descent with ptosis of the pelvic organs.
2. Tumors or enlargements of the uterus or adnexa.
3. Infections such as pelvic abscess, and salpingitis.
4. Tumors developing in organs outside of the bladder, such as the uterus or bowel, and growing into the bladder.
5. Tumors and diverticula of the bowel, which become adherent to the bladder, or break into the bladder and form fistulae.

Of lesions in the urinary tract the following may be noted: Congenital or acquired atresia of the urethral meatus; hypospadias, caruncle, papilloma, papillary carcinoma and diverticulum of the urethra; acute gonorrhea; acute non-specific urethritis; periurethral abscess; chronic urethritis; stricture of the urethra; foreign bodies in the urethra and bladder; trigonal cystitis; incontinence of urine due to poor sphincteric control or caused by faulty innervation; the various forms of cystitis, many of which are secondary to infections of the upper urinary tract; ulcers of the bladder such as tuberculous ulcers, simple ulcers and elusive or linear ulcers; tumors of the bladder, benign and malignant; leukoplakia; diverticula, and stone in the bladder.

A detailed account of any one of these lesions would make sufficient material for a paper in itself, and in order to keep within the time limit I have elected to discuss the following conditions: Cystocele; chronic urethritis and trigonal cystitis; stricture of the urethra; incontinence due to faulty sphincteric action; and elusive ulcer of the bladder.

These conditions have been selected because they are frequently responsible for disturbances of urination and are often overlooked.

1. *Cystocele*. This is a herniation of the bladder into the vagina and is usually associated with rectocele and descent of the uterus.

When this condition is well advanced it forms a pouch in the bladder which makes the completion of urination difficult or in some instances, prevents complete emptying of the bladder. If this occurs, we have to deal with a condition resembling prostatic obstruction in the male, in that there is a pouch below the

internal urethral orifice which holds urine after the completion of the act of urination.

This retained urine, as in prostatic obstruction, causes frequency, and a feeling as though the act had not been completed. When this residual urine becomes infected, which is not uncommon, cystitis develops with the associated characteristic symptoms of pain, urgency, tenesmus, pyuria and hematuria.

The cystoscopic picture is quite characteristic. There is a pouch below the internal urethral orifice and more or less trabeculation of the bladder wall, due to the over work of the musculature attempting to empty the pouch. There is injection of the bladder wall when infection occurs.

When the hernia is corrected by some plastic procedure, this pouch disappears as do the symptoms.

2. Acute and chronic urethritis and trigonal cystitis.

There are few adult women who have not had some infection of the urethral mucous membrane. When they are infected by the gonococcus, the urethra is the most common location of the infection. Also the bacteria which inhabit or gain entrance to the vagina not uncommonly invade the urethra and produce a urethritis with urinary disturbances such as frequency, urgency, pain, pyuria and sometimes hematuria. Acute hemorrhagic cystitis is not infrequently secondary to acute urethritis. This condition comes on suddenly with pain, frequency, urgency, tenesmus and severe hematuria. These patients rarely have a rise of temperature, which is true of most infections that are limited to the bladder mucosa. On cystoscopic examination the bladder mucosa is covered with areas of submucous hemorrhage, and in the more severe cases, blood can be seen oozing from the bladder wall.

Following these acute infections, the more chronic type of urethritis and cystitis may persist for long periods of time with the associated symptoms.

In these chronic cases the bladder mucosa may appear quite normal on cystoscopic examination, but there is often a marked injection of the trigone and urethral mucosa.

These cases are usually classed as trigonal cystitis and are often quite resistant to treatment. They may be relieved by the application

of silver nitrate solution to the mucosa of the urethra and trigone through a urethroscope or by placing a cotton applicator moistened with the same solution into the urethra and extending it back through the internal urethral orifice.

Urethral polyps are not uncommonly associated with chronic urethritis and trigonal cystitis. These little growths often surround the internal urethral orifice. They vary in size from a split pea to a good sized bean. They are easily seen with a cysto-urethroscope. They cause frequent urination when very large and numerous. They may produce obstruction and not infrequently may bleed.

They can be easily removed by the high frequency current applied through a cysto-urethroscope.

3. *Stricture of the urethra* in the female is about as frequent a sequel to the various infections and trauma as in the male. This is not commonly understood, because of failure to examine the female urethra. These strictures do not as a rule contract down to the point where they completely obstruct the outflow of urine as they may do in the male, but they are often the cause of persistent urinary symptoms such as frequency, pain on urination, and, when of small calibre, may cause some difficulty in the emptying of the bladder. Stricture is usually associated with a chronic urethritis and trigonal cystitis.

Stricture of the female urethra develops in the same way as stricture of the male urethra. There is first a destruction of the superficial epithelium by infection or trauma. This is followed by infiltration of urine with its chloride constituents, which have the property of producing connective tissue proliferation. This type of tissue tends to contract and to narrow the urethra and forms what we choose to call a stricture.

These patients suffer from frequency, urgency and pain due to the fact that the narrowed urethra causes a persistent urethritis with involvement of the mucous membrane of the trigone. The diagnosis can usually be made by introducing a bulb or acorn sound as in the male, and obtaining the hang as the sound is withdrawn, the narrow areas producing an obstruction to the passage of the shoulder of the bulb sound as it is withdrawn.

Having made the diagnosis the treatment is

both simple and satisfactory. Gradual dilatation with straight or Van Vuren sounds followed by instillation of mild solutions of silver nitrate such as one-quarter to one per cent solutions, results in the prompt relief of symptoms. As in the male, they may recur and, after complete dilatation, these patients should be dilated at long intervals until the possibility of recurrence is passed.

The relief of these patients by the early diagnosis and treatment of the stricture include a most grateful group because their suffering has usually been both severe and persistent.

4. *Elusive Ulcer of the Bladder.* These ulcers called by Hunner "elusive ulcer," but better described as "linear ulcer" are frequently the cause of severe and persistent urinary disturbances. They are due to a submucous infiltration or fibrosis which causes a thickening of the submucous tissues and stiffening of the bladder wall in the affected areas. These areas in time crack when the bladder is distended, producing the irregular jagged linear ulcer. On cystoscopic examination these lesions are difficult to see before they crack. There may be a localized area of redness and edema. On observing such an area while distending the bladder, one can frequently see an irregular crack or fissure develop on which small droplets of blood appear, which is quite similar to what we see when a chapped lip cracks. These patients suffer intensely from pain, urgency, and frequency and when the crack or fissure develops, blood is found in the urine. The urine is usually free from pus and is sterile. The ulcers often heal with scar formation. These bladders are small and contracted, holding but a small quantity of urine. The suffering of these patients is often out of all proportion to the appearance of the lesion.

Treatment. Bladder irrigations and the applications of chemicals have little influence on these ulcers. Resection including the entire bladder wall of the involved areas, transurethral fulguration, or diathermy applied through the supra-pubically opened bladder, and repeated dilatation of the bladder are helpful in some cases, while others are resistant or have a tendency to recur.

5. *Incontinence.* Incontinence of urine in the female is only too common, particularly that

type in which the woman passes a small quantity of urine intermittently. In studying these cases one must rule out those which are due to an organic lesion of the nervous system, a spina bifida occulta, a vesico-vaginal fistula, a congenital defect in the anterior vaginal wall and bladder, hypospadias, and an ectopic ureteral opening. These can all be diagnosed by a careful inspection of the urethra and vagina, and a neurological study. The type of case which I wish to discuss is the patient who has a partial intermittent loss of urine. This is often exaggerated by any exertion, such as straining, running, coughing and sneezing. These cases are very common, in fact, I sometimes wonder if there are any middle aged women who are absolutely water tight.

These cases are all due to a disturbed or weak sphincteric action. The female is poorly supplied with sphincteric control as compared to the male, who practically has a double sphincter. Some women are evidently born with a weak sphincter, in others the circular muscle fibers which make up the sphincter of the bladder are injured, as a result of childbirth. Many of these women date their trouble to a delivery which may have been a normal or a difficult one. There is a lack of tonicity of the sphincter. Although it is not an uncommon belief that these cases are difficult to correct, many of them can be benefited or cured by a rather simple procedure, viz. a plication of the neck of the bladder. The torn or destroyed ends of the sphincter muscle are exposed by a longitudinal incision made in the anterior vaginal wall opposite the neck of the bladder. The injured ends are brought together with two or more catgut sutures placed one on top of the other, which practically plicates the neck of the bladder. This is done with a pezzar catheter in the bladder which is allowed to remain in place for ten days. The incision in the anterior vaginal wall is closed with catgut. This operation has been described by Young, Cabot, Kelly and others.

It will be seen from the brief description of the above conditions, that their diagnosis and treatment are quite simple. Still one sees many women who have suffered from disturbances of urination for long periods of time without relief. This is due in part to a lack of investiga-

tion of the exact cause of the disturbance. Many believe that these urinary disturbances are caused by inflammation of the bladder mucosa (cystitis), and that they may be relieved by bladder irrigations containing various chemicals. From the above it can be seen that few of these conditions have anything to do with the mucosa of the bladder and that little if any relief could be expected from treatment directed to the lining of this organ.

It will also be noted that many of the lesions causing these disturbances may be diagnosed and corrected by one who is not especially trained in urology.

A careful history of the case, together with an investigation of the contents of the pelvis, an examination of the external urinary meatus and testing the patency of the urethral canal will be rewarded by finding the etiology of many of the disturbances of urination in the female. When these examinations fail to reveal the cause of the trouble an expert urologic study with urethroscope, cystoscope, etc. becomes necessary.

HEALTH EXAMINATIONS AT THE UNIVERSITY OF ILLINOIS*

VERGIL A. ROSS, M. D.,
CHAMPAIGN, ILL.

A complete physical examination is required of all students entering the University for the first time. The term "complete examination" is used here in a relative sense. For to utilize all available scientific resources for testing the quality of human tissue, the functional capacity of organs, the possible variations from the normal under varying conditions of stress would be impractical in our field of work. I consider an examination complete in a practical sense that fulfills the purpose for which it is intended.

The giving of these examinations starts at the end of the scholastic year in June and extends up to the time of registration in the fall. It is very important that this work be completed before the student registers so that findings are available in order to aid him in registration and progress in his school work. As some are below the Military requirement, consequently exempt from Military Science, others must be assigned to special classes in physical education, still

others must have their activity both physical and scholastic limited, a few have to rearrange their whole schedule due to physical defects which would handicap them tremendously if they should follow out their desire to train themselves for a certain profession and last, for the correction of defects.

The majority of these examinations come in a brief period just before registration and consequently must be taken care of at that time. This means an immense amount of work to be done in a short period. Our staff is inadequate to handle the situation and we have called upon you from time to time to assist during this period. I want to take this opportunity to thank you for the hearty cooperation you have always given us. You are familiar with the methods we use at this time—each physician doing a certain portion of the examination. This segmental type of examination loses sight of the individual as an integral unit. It is a sort of impersonal affair. I think you will all agree with me that if one physician could do the complete examination of a particular individual; at the end summarize the history and physical findings giving to the student what advice is indicated, that this would be more ideal. But time and facilities do not permit this procedure. To compensate for this loss of personal contact, one or two physicians are placed at a point where they see all students after they have completed the examination. It is the duty of these physicians to review the history and physical findings and give to them what immediate advice is necessary.

Now that the student has made his first skirmish with the University and a record is obtained of his physical condition and medical history, you may ask what further relationship exists between the students and the physician of a University health station.

Webster defines "physician" as "a person skilled in the art of healing, and duly authorized to treat disease." The armamentarium of the physician of today is greater than this. In addition to his duty of treating disease, he has taken upon himself the task of detecting disease in its incipency, guarding against disease tendencies and advising regarding personal hygiene. Again the same authority defines patient as "a sufferer; one who bears or endures; a sick person." It becomes apparent at once that the

*Read at meeting of Champaign County Medical Society, January 10, 1929.

patient of today does not always conform to this definition. Many times he demands of his physician that he be kept from playing the role of sufferer. It is with these more recent interpretations of "Physician" and "Patient" that we are concerned.

Now I may summarize the main object of a University health service. It is to improve the physical and mental health of students, aid in the stabilization of their emotional aspect of life, the prevention of disease, the education of the student body in regard to the essentials of healthful living and recommending the correction of physical defects. The examination records of these students are a valuable aid in carrying out these various functions.

Early in the first semester, following the completion of the entrance examinations, both the history and physical findings are rechecked by physicians. The purpose of this is to find those individuals that require further examinations and advice. Many conditions found at the time of examination, if interpreted without further examination, would lead to incorrect conclusions. I have previously stated that immediately following the examinations, the findings are summarized for the student, their significance explained and recommendations for their correction made. This statement should be qualified. Only that information is imparted to the student at this time in which correct deductions can be made as this advice is given at the time when the student is lost in the general maze of his new environment. So it becomes necessary to recheck and recall most of the individuals that have findings that deviate from the normal. As these cards are reexamined, various lists are made including the students' names and what reexaminations are to be made. The purpose of this is to have a record so that the reexamining physician will know what he is expected to reexamine without having to review the whole card and also for the purpose of telling when all this work is completed. These lists include heart, blood pressure, lungs, vision, teeth, thyroid, albuminurias, and various other conditions. Many of these cases require the taking of more history and a repeated number of consultations and examinations. A few require special examinations as x-ray, functional tests, basal metabolism, etc., wherever these are indicated, they are advised to have them done. Sometimes these follow up

interviews are merely to be sure that the patient is following instructions. Frequently the re-examination gives the patient an opportunity to ask questions that he was not prepared to ask before.

There are other examinations given besides those at the time of entrance. A yearly complete examination is of unquestionable value. Our facilities do not permit us to follow out this routine among the large student body. We encourage them to have a yearly examination and take care of all those that request it.

Then there are the special physical examinations for students who participate in the strenuous type of athletics. These are to protect the student from attempting more than he is physically able to do and to safeguard the institution against an accusation of negligence in the discharge of the moral responsibility attendant upon the sponsoring of these activities.

Aside from the direct benefit derived by the student during his sojourn here at the University and in his future by these examinations, these records as they extend through the years give a certain amount of valuable information. For as you review the records you find among the abnormalities two types that are remediable. The one type that could have been prevented, had proper measures been taken earlier in life, but as found at stage of life when these examinations are given is past repair. The other type consists of those that are still remediable. And as these remediable and non-remediable, yet preventable defects, are found to be less through the years for this particular group, it will serve as an index of the advancement of preventive medicine.

A MODIFIED MURPHY PNEUMOTHORAX APPARATUS

WILSON RUFFIN ABBOTT, M.D.,

CHICAGO

The accompanying sketch of a modified Murphy pneumothorax apparatus is made from an instrument that has been in the service of the writer for a number of years. The faults of the Murphy apparatus, as originally designed, soon become apparent to one who uses the instrument often and over a long period of time, albeit, it has at least three outstanding features which commend it—simplicity, compactness of

design. and lightness in weight. By engaging the services of a good mechanic, with an expenditure of about ten dollars, the "kinks" can be removed and a highly satisfactory instrument obtained.

"A" is a guide arm supported on the posts Nos. 1, 2 and 3, which are parts of the Murphy apparatus.

"B" is a calibrated post drilled out for inser-

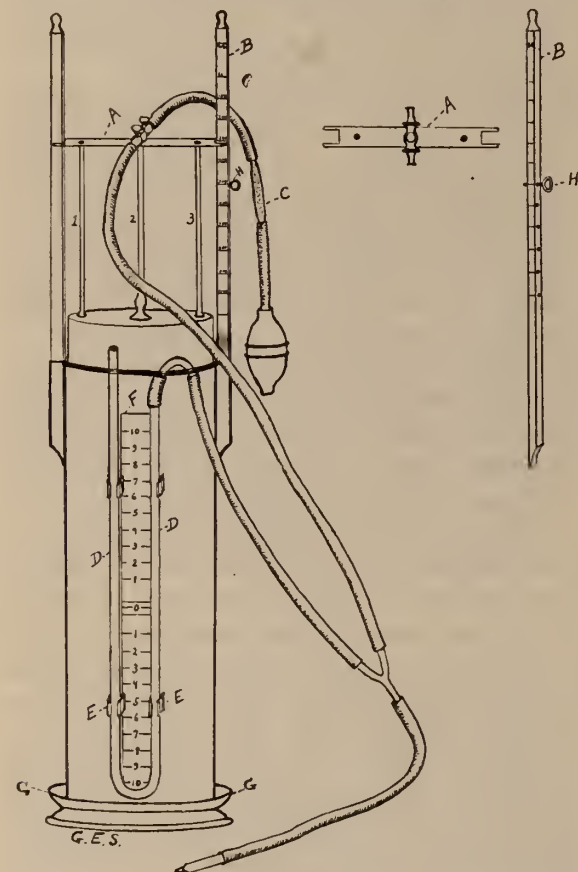
"H," removable pin, to be placed in the drilled holes. This is necessary because from the 500 c. c. mark the cylinder descends with uncontrollable rapidity due to the diminished volume of air contained therein. It is obvious that the cylinder will not descend beyond the point at which the pin is inserted.

"IDIOPATHIC" PERITONITIS*

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There has been considerable discussion in the literature about the justification of the use of the term "idiopathic" in connection with peritonitis. Melchior¹ has championed the term in relation to an acute serious type of peritonitis and cites over a dozen cases to prove his contention. He thinks this type is comparable to the hydrocele frequently seen in children. Such men as Duperthuis² and Michejda³ disagree, believing there is always a focus, such as a strangulated viscus, pancreatitis, or retroperitoneal inflammation which produces the peritoneal reaction, and the fact that the patients may recover does not prove either the presence or the absence of bacterial infection. König⁴ and Koch have also refused to admit the use of the word. There is no doubt but that most of the cases formerly included in this classification can be readily excluded by careful clinical and laboratory work. In other words, if the patient is operated upon for peritonitis and no primary focus is found, one is not justified in concluding that none is present without autopsy examination. On the other hand, there is still a small group of cases in which careful examination fails to reveal a primary source for the infection. Montgomery,⁵ in 1925, reported under the title "Primary Pneumococcus Peritonitis" a case in which careful examination failed to reveal evidence of pneumonia or other extra-abdominal focus, and Leonardo,⁶ in 1926, writing on "Primary Pneumococcus Peritonitis," cited four cases occurring in male infants in an effort to combat the more or less prevalent idea that the infection spread by way of the genitalia. Fishbein,⁷ in reporting the results of 184 autopsies,



tion of removable pin "H" at calibrations from 500 c. c. to 1000 c. c.

"C" is a glass tube filled with loosely packed cotton which is moistened with a few drops of Lysol. This makes a satisfactory air filter.

"D" is the manometer, made of 3/16 inch glass tubing about 88 mm. long, bent over a fish-tail burner. Incidentally, the price of the usual water manometer is about five dollars, whereas the one herein described can be made for a few cents, without any sacrifice of accuracy.

"E," fuse clips (automobile) soldered to cylinder, permitting an easy removal of manometer.

"F," metal strip, 2 cm. in width, calibrated in centimeters and soldered to cylinder.

"G," splash cup.

*From the Surgical Department, Rush Medical College of the University of Chicago, and the Presbyterian Hospital, Chicago.

*Read before the Section on Surgery, Illinois State Medical Society, Peoria, May 22, 1929.

found 39 cases of "primary" peritonitis. While almost all such cases can be classified according to the bacteriology found, the primary focus in some instances still remains unknown.

In reviewing a series of histories in the Presbyterian Hospital, I have found 22 cases recorded as idiopathic or primary peritonitis, or as peritonitis of unknown cause. To these, I wish to add one case from the Highland Park Hospital. An analysis of these cases immediately revealed the fact that ten were merely lacking in data for a complete diagnosis. For example, Mr. J. L. Mc. (163680) was operated upon by Dr. Bevan with the preoperative diagnosis of appendicitis. A diffuse peritonitis was found without involvement of the appendix or gall-bladder. Careful exploration failed to reveal any other tangible primary focus. The patient died and no autopsy was obtainable. Although the entire bowel was examined, is it not possible that a retroperitoneal infection, or even pancreatitis without the usual fat necrosis was overlooked? Another example was Mr. J. R. (95018) operated upon by Dr. Phemister. This patient, a man aged 61, entered the hospital with marked abdominal distension, acute pain and generalized tenderness. At operation diffuse seropurulent peritonitis was found, most marked in the pelvis. Examination of appendix, sigmoid and bladder was negative. The patient was drained and went on to a prompt recovery. Might he not have had pancreatitis, or an undiscovered inflamed diverticulum, or even a perforated ulcer which had spontaneously closed? Obviously, we are not justified in calling such cases idiopathic or primary.

In a second group (Series II), comprising ten cases, we find on closer examination of the history, a presumptive focus in some remote part of the body. For example, V. S. (169656), a female child, four months old, died with general peritonitis. Staphylococcus was found at autopsy, both in the peritoneal cavity, in furuncles about the head and from a furuncle of the abdominal wall. This case almost certainly belongs to the group which should be diagnosed as hematogenous peritonitis from a known primary focus although lymphatic extension through the abdominal wall must be considered as a remote possibility. Such an example, also, is the case of E. J. (222764). This patient, a

girl, aged 9, entered the hospital on the service of Dr. Parmelee, March 30, 1928. She complained of pain in abdomen, diarrhea, and headache. Her history dated back nine days when her sole complaint was a headache. The following day her temperature rose to 102° F. and on the third day it had reached 105° F. On the fourth day, the child's throat was reported to have been distinctly reddened and her temperature was 106° F. Two days later, she had a severe chill, followed by abdominal pains and diarrhea. Dullness developed on the right side of the chest and on April 2, a bloody fluid was obtained by thoracentesis. Culture of this fluid revealed the hemolytic streptococcus. The patient's condition grew worse. Though definite signs of peritonitis developed exploration did not seem at any time to be warranted. Death occurred April 8, and autopsy revealed acute generalized fibrinopurulent peritonitis; bilateral pleuritis; right empyema, but no gross pathology in the throat. Streptococcus hemolyticus in pure culture was obtained from the peritoneal and pleural fluids.

Without a careful history, the primary cause of this child's peritonitis would never have been discovered, but under the circumstances, there is no doubt but that it should have been included under the hematogenous group with the throat as the primary source.

Finally, we have left but three cases. (Series III.) The first, a baby girl, B. S. (117605), four weeks old, was brought to the clinic on account of swelling of the abdomen and continual crying. The onset was somewhat gradual, but the child had been vomiting for three days. Except for distention of the abdomen and fluid in the flanks, the physical examination was negative. I operated upon the child and removed about 500 c. c. of an opalescent turbid fluid from which the streptococcus was grown in pure culture. The child died four days later and no evidence of a primary focus could be found.

The second case, C. G., a boy of nine years, was referred to me by Dr. M. D. McNeal of Highland Park. According to the history, he had not felt quite well for some time, but had been doing all ordinary things. On September 22, 1927, he had some fever for which no cause could be found. The following day he was quite well and went to school. On Septem-

ber 24, his temperature went to 103° F., and Dr. Penny, of Libertyville, thought the child had peritonitis. A few hours later, there was no rigidity and the boy seemed better. On September 26, when I saw him for the first time, the patient presented the picture of general peritonitis, with temperature 104.6° F. and leucocytes, 41,000. There had been nothing to suggest a primary focus. Immediate exploration by midline incision revealed generalized serofibrinous peritonitis. Cultures showed streptococcus hemolyticus. The child died September 28, and autopsy was performed by Dr. C. W. Apfelbach. His chief findings were: "Acute serofibrinous generalized peritonitis; recent laparotomy wound; marked hypostatic hyperemia and edema of the lungs; hyperplasia of the solitary lymph follicles of the small bowel and Peyer's patches; and dilatation of the stomach and bowel."

In reviewing the possible source for this infection, it was learned that the boy had been given Dick's serum, about September 1, because two or three mild cases of scarlet fever had developed in his camp. At no time was there any evidence that he had scarlet fever.

The third case, a female colored child, A. J. (183630), 2 years old, entered the hospital on the service of Dr. Grulee. She had been ill for two to three weeks, beginning with fever, convulsions and delirium. Distension of the abdomen was noted soon after onset. Belching was constant, but no vomiting until two days before admission. There was no history of cough or of severe pain. Leucocyte count, 18,000. The child died the following day and autopsy showed what appeared to be primary pneumococcus peritonitis.

It will be seen that these last three cases bear a striking resemblance to those of the second group in which there occurred a definite primary focus elsewhere that had been overlooked. Where careful examination still leaves us at a loss to explain the primary source of the peritonitis, it seems to me that the term "cryptogenetic" used by Leube, is much more appropriate than such terms as primary or idiopathic.

Discussion: In analyzing thirteen cases of supposed primary or so-called idiopathic peritonitis, it has been found that most of them are hematogenous in origin. While it is possible

that one or two may be the result of lymph stream invasions or direct extensions from old walled-off foci, such as infected retroperitoneal lymph nodes, definite proof is lacking. Jensen and others have suggested the possibility of invasion by way of the gastro-intestinal tract, but the feeding of pneumococci to young rabbits has given uniformly negative results. Nine of these cases were streptococcus infections, one staphylococcus aureus and one pneumococcus. In two the organism is not stated. It has been repeatedly pointed out that primary pneumococcus peritonitis occurs only in children, and this would seem to be borne out in the case of the streptococcus as well. It has been assumed that blood borne infections occur much more readily in children, but the development of immunity is probably responsible for the extreme rarity of this disease in older individuals.

The symptoms in all cases were those of acute peritonitis with high fever, marked leucocytosis—18,000 to 41,000—and usually marked prostration. To differentiate the picture from that of appendicitis is difficult and sometimes impossible. It is striking, however, that appendicitis was not the working diagnosis in the majority of these cases. While the mortality in the thirteen cases is 100%, patients making a recovery have been placed in the first group. Nevertheless, the mortality in acute pneumococcus peritonitis varies according to Lipschutz and Lowenburg⁸ from 85% to 90%, and streptococcus peritonitis must have close to 100% mortality.

I have nothing to add in the way of treatment, except to call attention to the frequency of nose and throat infections as the primary focus. While operation has little to offer in this type of peritonitis, where doubt exists as to the presence of an acutely inflamed appendix or other abdominal focus, the patient should be given the benefit of the doubt.

Conclusions: 1. Thirteen cases of so-called "idiopathic" peritonitis have been studied. Most of them are streptococcus or pneumococcus infections of hematogenous origin.

2. Careful history taking combined with careful autopsy findings should completely eliminate the use of such terms as primary and idiopathic as applied to peritonitis.

3. In the rare instances in which accurate

laboratory methods fail to reveal the primary source of peritonitis, the term *cryptogenetic* is suggested.

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DISCUSSION

Dr. E. P. Coleman, Canton: In the spring of 1912 when I was a junior medical student there was an epidemic of sore throat in Chicago. We were informed by some of our faculty men that a large number of these cases had developed symptoms of peritonitis following acute tonsillitis. It was a milk-borne infection, rather general over the city. I remember it very well because I first got it and brought it back to our fraternity house, while doing maternity work. The term used was septic

SERIES II

Name	Hosp. No.	Attending Physician	Sex	Age	Outcome	Diagnosis	Organism Found	Notes
M.B.	190030	Parmalee Oberhelman	F.	45 d.	Died	Acute pyogenic peritonitis	Not cultured	w.b.c. 35,900 sup. arthritis of right hip
F.B.	159896	Winholt	F.	49 d.	"	Acute serofibrinous peritonitis	Strep.	w.b.c. 24,200 lymph gland hyperplasia
V.S.	169656	Gardner	F.	4 mo.	"	Serofibrinous peritonitis	Staph. aureus	w.b.c. 43,700 furunculosis of neck and abdomen
N.B.	101711	Herrick	F.	12 yrs.	"	Peritonitis pleuritis pyemia	Not cultured	w.b.c. 29,000 pericarditis evident before death
E.A.	177121	Grulee	M.	2½ yrs.	"	Acute serofibrinous peritonitis Gen. icterus Acute anemia	Strep. hemolyt.	w.b.c. 31,000 sore throat 7 days before death
H.A.	96887	Bassoe	M.	1 yr.	"	Purulent peritonitis	Strep. hemolyt.	w.b.c. 33,800 bilateral acute pleuritis. Laryngitis
M.T.	202754	Grulee	F.	7½ mo	"	Generalized peritonitis	Strep. hemolyt.	w.b.c. 19,300 Acute throat infection. Some vulval irritation
J.B.	211899	Hoffman Straus	F.	6 yrs.	"	Acute peritonitis Maxillary sinusitis Pyemia (?)	Coccus in chains. No cultures	w.b.c. 16,800 Sinus drained 10 days before peritonitis developed
C.N.	214149	Grulee Gatewood	F.	11 mo.	"	Generalized peritonitis	Strep. hemolyt.	w.b.c. 29,000 Vaginitis and probable arthritis
E.J.	222764	Parmalee	F.	9 yrs.	"	Fibrino-purulent peritonitis Bilateral pleuritis Empyema (R.)	Strep. hemolyt.	w.b.c. 23,000 Red throat 2 days before onset of pericarditis

SERIES III

Name	Hosp. No.	Attending Physician	Sex	Age	Outcome	Diagnosis	Organism Found	Notes
B.S.	117605	Hoffman Gatewood	F.	28 d.	Died	Serofibrinous peritonitis	Strep.	No primary focus discoverable
C.G.	H. P. Hosp.	McNeal Gatewood	M.	9 yrs	"	Acute serofibrinous peritonitis	Strep. hemolyt.	w.b.c. 41,000 Exposed to scarlet fever 3 weeks previously
A.J.	183630	Grulee	F.	2yrs.	"	Purulent peritonitis Bilateral pleurisy	Pneumococcus	w.b.c. 18,000 No primary focus discoverable.

peritonitis. A number of cases were operated on. An inflamed peritoneum was found, but the appendix was normal. Since graduation my experience in primary peritonitis or idiopathic peritonitis is limited. There will be an occasional case in young children. Symptoms of appendicitis will be present and at operation a moderately inflamed peritoneum will be found, a normal appendix removed and the patient recover. That may be a hemolytic infection. I have two cases proved by autopsy, both in young women in the early twenties; both were brought in with general peritonitis; both were opened and a considerable amount of pus found. At autopsy in neither case was there a perforation or evidence of any pelvic trouble or any other focus of infection. I believe those were hemolytic infections. The pus was pneumococcus in type on culture. I think these were cases of primary peritonitis. I mention this possibility; some cases that were thought to be appendicitis and were called appendicitis because one or two rather large vessels were found near the appendix which ease the conscience of the operator, but some of these cases may be secondary to hemolytic infection with a very low grade peritonitis which is not fatal.

Dr. Bradford Lewis, St. Louis, Mo.: I want to say in the first place that I do not know anything about this condition from my personal experience but just what I have derived from my work in the St. Louis City Hospital many years ago in which the mortality rate quite compared with that reported in Dr. Gatewood's paper, his own mortality in that group being 100 per cent. and an admitted mortality of 95 to 98 per cent. I became acquainted with the work of Dr. Chrysler of Memphis. I was invited by Dr. Chrysler to go duck hunting and just as we were about to go out in the early morning a patient came in from Missouri with a pulse of 140 and the abdomen blown up from appendicitis of five days' standing. Dr. Chrysler opened him up right away and used his iodine method of treatment. My own observation was that he was wasting his time and that the man would be dead before he would get back. He said, "Dr. Lewis, the man will get well." I told him I had seen quite a number of such cases and they all died. Still he was convinced that the patient was going to get well. We went on our hunt and came back five days later and the patient was sitting up in bed calling for grub; he got well.

Dr. Chrysler told me that he had had 85 to 90 per cent mortality but by the use of the iodine treatment which he and Dr. Johnson had instituted, they had reduced the mortality to 5 per cent. The success of their method was verified in this one case, at least. The method consists in putting 2 per cent iodine solution into the infected abdominal cavity and working it among the intestines. After taking out maybe a quart of pus, sluicing the iodine solution into the abdominal cavity and wiping it out, putting in another pitcherful and wiping it out. The method and results have been reported to the

Southern Surgical Society. If I were doing general surgery I would make use of it.

Dr. Gatewood, Chicago (closing the discussion): This is obviously a big subject and it is too late to discuss it in detail. I thought someone would say more about pneumococcal peritonitis. It is divided into two groups. The mortality in the acute type is what I have given; the mortality in the chronic type is very much less. In pneumococcus peritonitis some of the patients have a direct extension through the diaphragm and a localized peritonitis, while other have general peritonitis. Most of the patients in my series are of the streptococcal type and the mortality must be close to 100 per cent. In selecting this group I took autopsy cases and naturally my mortality was 100 per cent. In patients where I could find a definite etiologic factor, the results were slightly better.

In regard to Dr. Lewis' suggestion, I have not very much to say because I have not tried it. There is considerable to be said for thorough irrigation of acute peritonitis of any type. Murphy showed that long ago. On the other hand, it has been the experience of most of us that the less one did in the way of irrigating and destroying the protecting exudate, the better off the patient was. I feel, with Dr. Harger, that these patients should be explored early and what fluid can be removed, removed. It has been shown by many people that experimentally the stomach kills off streptococci very rapidly and that streptococci cannot be obtained from the fasting stomach; in fact, very few pathologic organisms will live in the stomach for a long period of time. Indeed, were this not the case those of us who do surgery of the stomach would have many cases of peritonitis.

A CLINICAL REPORT OF NINETEEN CASES OF FRACTURED TRANSVERSE PROCESSES PRODUCING SYMPTOMS SIMULATING THOSE REFERABLE TO THE KIDNEYS*

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At the meeting of this section last year, we had several papers which discussed the symptomless spine, including many anomalies and variations of greater and less magnitude. At this time, I will try to briefly discuss the clinical aspect of a spinal injury, which in 19 cases out of 26 coming under my observation, gave symptoms clearly simulating those referable to the kidneys on the injured side.

I have no apologies to make for presenting this brief resumé of the clinical, roentgen and

*Read before the Section on Radiology, Illinois State Medical Society, May 22, 1929.

pathological findings in this series, except that possibly the reporting of them is rather late and long delayed. As it is, they would probably not have been reported at this time, had I not recently come upon a case that was almost identical with the first one I saw, which was some 15 years ago.

Fractures of the transverse processes of the lumbar vertebrae are not rare, but a series of 19 cases which gave symptoms referable to the kidneys, none of which showed shadows which might be diagnosed as kidney stones, seems to me to be of sufficient interest to present at this time.

All these cases except six were in men, and all except three presented a definite history of severe trauma to the lumbar region, from three to twenty-five years before. The three exceptions were recently injured. Five of the nineteen cases

were operated on and had the broken and deformed transverse processes removed, all of which resulted in prompt and complete relief from the symptoms complained of, and referable to the kidneys.

I will not go into the history of these cases except in a fragmentary manner, but will recite something of the first case, more particularly.

Case 1 was a well known Chicago physician, who while a boy living on a farm had been thrown from a horse, and landed upon the top of a fence post on his left flank. For something like a dozen years he had been complaining of symptoms referable to his left renal region.

After I had examined him and reported negative renal findings, but with the presence of a fractured first left lumbar transverse process, he and his surgical confrere demurred upon accepting so bizarre a cause for his trouble. He was then most carefully examined by three of the most prominent Chicago

TABULATION OF 19 CASE RECORDS OF FRACTURED TRANSVERSE PROCESSES, PRODUCING SYMPTOMS REFERABLE TO THE KIDNEYS

<i>Case No.</i>	<i>Sex</i>	<i>Age</i>	<i>Duration of Symptoms</i>	<i>Clinical Diagnosis</i>	<i>Roentgen Findings</i>	<i>Operated</i>	<i>Remarks</i>
1.	M	43	12 years	L. renal stone	Fract. L. 1st Lumb. tv. process.	Yes.	Prompt and complete relief.
2.	M	36	2 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
3.	M	45	16 years	R. renal stone	Fract. R. 1st Lumb. tv. process.	Yes.	Prompt and complete relief.
4.	M	17	Recent	R. renal symptoms after injury	Fract. R. 1st Lumb. tv. process.	Yes.	Prompt and complete relief.
5.	M	36	7 years	L. renal stone	Fract. L. 1st Lumb. tv. process.		
6.	M	28	11 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
7.	M	59	Recent	Injury with L. renal symptoms	Fract. 1 and 2 L. Lumb. tv. processes.	Yes.	Prompt and complete relief.
8.	M	36	8 years	L. renal stone	Fract. R. 1st Lumb. tv. process.		
9.	M	41	10 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
10.	F	36	12 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
11.	M	46	15 years	R. renal stone	Fract. 1st Lumb. tv. process (R).		
12.	M	40	5 years	L. renal stone	Fract. L. 1st Lumb. tv. process.		
13.	F	26	3 years	L. renal stone	Fract. L. 1st Lumb. tv. process.		
14.	M	45	12 years	R. renal stone	Fract. R. 1 and 2 Lumb. tv. processes.	Yes.	Prompt and complete relief.
15.	F	26	2 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
16.	F	32	6 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
17.	F	33	7 years	L. renal stone	Fract. L. 1st Lumb. tv. process.		
18.	F	25	6 years	R. renal stone	Fract. R. 1st Lumb. tv. process.		
19.	M	50	Recent	L. renal symptoms following injury	Fract. L. 3, 4 and 5 L. Lumb. tv. processes.		Struck by front mudguard of model T Ford.

surgeons, two leading internists and one leading roentgenologist, none of whom would agree with my diagnosis. Later a roentgenological confrere, to whom I referred the patient, agreed with my findings, and in sheer desperation, the patient decided to submit himself to operation, and had the fragment—a malunited transverse process—removed. During the operation, while viewing the field of operation, after the bone had been taken out, we saw, lying *immediately* beneath the distal extremity of this piece of bone, a small nerve, which had its sheath decidedly and definitely reddened—where the tip had been causing pressure, and it was assumed, from the subsequent history of the case, that this pressure on the nerve had caused the pain complained of, and which did not recur after the operation.

The history of the other four cases operated on is almost identical, as regards the results following removal of the fractured bone; but in these cases my diagnosis was immediately accepted, without cavil. The results following all these operations were ideal.

The operation for removal of these bone fragments is a difficult one, as the surgeon has to burrow down deep, and separate heavy muscles, and after reaching the offending structure, he must remove it along with its periosteum, so that it will not grow again; but as before stated, the effort is well worth while.

The following table will give such particulars as may be of interest and value.

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SANITARY CONDITION OF THE ILLINOIS RIVER*

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CHICAGO

Many investigations have been made concerning the pollution of the Illinois River. There is probably no stream in the United States that has been so thoroughly studied from a chemical and bacteriological standpoint. Long before the opening of the Drainage Canal the river was seriously polluted by sewage from Chicago and other cities along its banks. These investigations started almost sixty years ago under the direction of E. S. Cheseborough. Twenty years later further studies were made by Dr. John H. Rauch and Professor J. H. Long. In 1894 the Chicago Health Department carried on studies under the direction of Dr. Adolph Gehrmann. In the year

preceding the opening of the Drainage Canal very extensive studies were undertaken and these were continued throughout 1900 following the opening of the Canal. These investigations were made under several authorities including Dr. Arthur R. Reynolds, Commissioner of Health of Chicago, Edwin O. Jordan, University of Chicago, Dr. Arthur W. Palmer and T. J. Burill of the University of Illinois. A fourth collaborator was Mr. Holman, Water Commissioner of St. Louis, who arranged to have duplicate analyses made at Washington University. These very extensive investigations formed the scientific basis of the data presented in the famous Illinois-Missouri suit concerning the opening of the Drainage Canal.

Occasional analyses were made by the Sanitary District after the opening of the Canal, particularly after 1910. Between 1910 and 1919 occasional trips were made down the Illinois River by chemists of the Sanitary District. In 1919-21 more extensive studies were made, extending over several months, during the summer season. The need for more data prompted the Sanitary District to request a more extensive investigation by the United States Public Health Service. Through the cooperation of the Surgeon General the necessary arrangements were made and a thorough investigation was made under his direction, with the help of the Sanitary District, from August, 1921, through August, 1922. The results of these studies furnished the most comprehensive basis for detailed estimates of the amount of diluting water required for future conditions. Some results of this investigation will be discussed later.

One difficulty was found in interpreting the results of this survey on account of the fact that only a single sample was taken each day. The discharge and composition of the river water was found to vary materially throughout the 24 hours in the upper part of the river. An attempt was made to correct the single analyses so that they would express the daily average result, but the correction factors were based on rather limited data extending over 24 hours.

In order to obtain completely authoritative data the Sanitary District started the most comprehensive investigation to date in 1925. This is still in progress. In 1928 approximately sixteen stations were included, extending from Chi-

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, Peoria, May 22, 1920.

cago to Grafton. At most of these stations there were three samplers who collected hourly samples, which were analyzed in six field laboratories located at Joliet, Marseilles, Chillicothe, Peoria, Pekin and Beardstown. Assistant chemists were stationed at these laboratories, where samples were analyzed and data summarized. These data will be discussed later.

In addition to the work mentioned above, long continued studies have been made by the State Natural History Survey under Stephen A. Forbes, Chief. Mr. Robert E. Richardson has personally conducted most of these studies and he probably has a more intimate knowledge of the sanitary condition of the Illinois River than any other man. These studies have referred mainly to fish life in the Illinois River.

In addition to these investigations occasional studies have been made by the Illinois State Water Survey, some of which were in collaboration with the Natural History Survey.

Use of Illinois River. The Illinois River has not been used as a source of water supply within the last fifty years. Most of the towns located along its banks have been able to obtain drinking water from deep wells. The 1899-1900 surveys had some reference to water supply in that the Illinois-Missouri suit was concerned with the possibility of the pollution of the St. Louis water supply by pathogenic organisms from Chicago. The bulk of the testimony proved that this danger was negligible. Since then the investigations have been mostly concerned with a study of nuisance conditions, with accompanying disappearance of fish life, odors from sludge and deoxygenation of water, and destruction of pleasure boating and passenger traffic. These factors are now probably the only ones of importance, as there is no thought that the Illinois River will be used for water supply even in the remote future. The conditions of nuisance will be of great importance when the deep waterway is completed. Passenger traffic will require a waterway free from odor, clear, and of attractive appearance.

Conditions for the past ten years in mid-summer have not changed appreciably, since the amount of diversion at Chicago has increased slightly and a certain amount of reduction in polluting matter has been accomplished. Each summer the conditions in the upper river are

very bad, particularly above the Marseilles Dam. There is very little improvement until Peoria Lake is reached, but a remarkable self purification occurs throughout this stretch. The river immediately below Peoria does not show the full effect of the Peoria pollution, but at Pekin, Havana, and Beardstown the river is unable to recover and the dissolved oxygen remains considerably below saturation. In fact there is only 4.0 p.p.m. dissolved oxygen at Grafton in mid-summer, equivalent to 50 per cent saturation.

Although mid-summer conditions of pollution are usually most serious, at times the river freezes over in severe winters and the absence of reaeration results in dissolved oxygen values which almost approach zero. Such a winter occurred in 1917-18. Under such conditions the killing of fish is more extensive than during hot weather because the fish are unable to reach oxygenated water. From a general standpoint the nuisance from odors is not appreciable in winter.

Spring floods are of benefit in diluting the polluting matter, but they carry sludge deposits farther down stream, where they are deposited and effect a deterioration in summer. The river is usually in worst condition when we have very warm weather in June with low flow of tributaries. Under these conditions the sludge deposits in the upper river decompose almost explosively, resulting in the discharge of large masses of floating sludge, which are carried down the river to Chillicothe and beyond. In our studies, however, there has been no season in which the river was unable to recover markedly during passage through the Peoria lakes. At Chillicothe dissolved oxygen may frequently average 1 p.p.m. or less but at Averyville the average is usually from 4 to 6 p.p.m. The shallow water and the abundance of green growths accomplish remarkable self-purification of the river water. These lakes have served as excellent barriers against the progressing pollution for a good many years. As the sewage load of Chicago is reduced the first improvement will be noted in this part of the river.

Oxygen and Bacteria. Dissolved oxygen results for a typical recent year are given in Table I for August, 1926. The results indicate that there is practically no oxygen present above Marseilles and only 1 p.p.m., or slightly more, down to

Chillicothe. At Averyville and Wesley a little over 6 p.p.m. was found but this decreased to 3 p.p.m. at Beardstown.

TABLE I—ILLINOIS RIVER
Dissolved Oxygen, August, 1926, Sanitary District of Chicago

Station	Temp °C	Dissolved Oxygen	
		Parts per Million	Per Cent Saturation
Lockport	23.0	0.1	1
Brandon's Bridge	23.0	0.7	8
Morris	23.5	0.4	5
Marseilles			
above dam	24.7	0.8	9
below dam	24.7	4.1	48
Peru	24.4	1.7	20
Henry	24.1	1.2	14
Chillicothe	25.5	1.4	17
Averyville	24.5	6.0	70
Wesley City	25.2	6.4	77
Pekin	25.8	4.5	54
Beardstown	24.9	3.0	36
Pearl	25.8	3.5	42

Bacteriological analyses were made by the United States Public Health Service in 1921-22.

less than in summer and all counts at all points were well below the summer averages. From their results the Public Health Service has calculated the total number of B. coli contributed per capita to the Illinois River. They found that each day one individual contributed 230 billion B. coli on the yearly average, varying from 42 billion in winter to 430 billion in summer. These figures refer to the river below Lockport. At Peoria the average was somewhat less and the variation between summer and winter was not so great. Many other interesting conclusions were drawn from the bacterial results with reference to the death rates and the effects of dilution and sedimentation. These results show further that in summer within 2.0 hours time of flow below Lockport 50 per cent. of the original bacteria had been eliminated and that in 86 hours 99 per cent of the B. Coli were destroyed. These results add further confirmation to the previously held theories with regard to the rapidity

TABLE II—ILLINOIS RIVER
Bacteria and B. Coli, U. S. Public Health Service

Station	September, 1921			Corrected for dilution and additional downstream pollution Hours from Lockport	Summer Season		
	Gelatin 20°C.	Agar 37°C.	B. Coli		Per Ct. of Original Count		
Lockport	3,420,000	4,390,000	39,600	0	100.0	100.0	100.0
Joliet	2,520,000	2,900,000	49,500	1.3	66.6	62.7	76.8
Brandon's Bridge	2,030,000	2,370,000	31,500	2.0	47.6	50.9	47.2
Morris		2,270,000	31,600	14.3	37.5	38.1	38.3
Marseilles							
above dam				27.0	26.1	24.5	19.8
Ottawa	290,000	352,000	3,970	31.8	17.5	14.4	15.8
LaSalle	67,300	73,800	1,470	41.1	4.1	3.0	5.6
Henry	21,700	22,800	152	85.8	2.1	1.7	0.6
Averyville	3,310	2,830	13	185.0	0.15	0.08	0.03
Pekin	47,000	50,300	310	....	....	....	....
Havana	98,800	89,300	898	....	....	....	....
Browning	22,300	26,000	252	....	....	....	....
Beardstown	24,700	25,800	220	....	....	....	....
LaGrange	23,400	21,100	187	....	....	....	....
Pearl	25,300	15,600	314	....	....	....	....
Kampsville	20,000	10,600	111	....	....	....	....

Their results are shown in Table II for September, 1921. These results show a very sharp decline in bacterial count in the upper part of the river, with a slower rate of decrease from La Salle to Chillicothe. Just below Peoria there is a tremendous increase with a following decrease, although the count far down stream at Kampsville is still greater than at Averyville. The rate of decrease of B. coli was apparently as great as that of the saprophytic organisms.

In winter the rate of decline was very much

of self-purification of polluted streams. The survival of pathogenic organisms for longer periods than 100 hours would be quite surprising under such antagonistic conditions as are found in highly polluted streams like the upper Illinois. It is quite probable that danger from pathogenic organisms disappears quite some time before conditions of nuisance are alleviated.

Sewage and Industrial Wastes. The major sources of pollution in the Illinois River are human sewage and organic industrial wastes. Thor-

ough studies have been made by the Sanitary District of the various industrial wastes in Chicago. Briefly, these are the stock yards, Corn Products, and tannery wastes. The total effect of these three wastes is equivalent to approximately 40 per cent. of the human population. Within the last few years a remarkable reduction has been made in polluting matter discharged in Corn Products wastes at Argo. By cooperative work the population equivalent of these wastes has been reduced from more than 400,000 down to 55,000. This load has been taken off the upper Illinois River. The opening last fall of the North Side Treatment Works at Chicago is also an important factor in relieving the pollution load. At present, on account of the financial stringency, we are operating this plant at only one-third of its capacity. With increased funds it will be possible to operate it at full capacity, which is 175 million gallons per day. This will treat sewage of a population of 800,000.

The West Side Works Imhoff tank plant can be completed as soon as funds are available. The greater part of two units out of three comprising this plant is almost finished, consequently within the next one and one-half years it should be possible to treat the sewage from a population of more than one million. The net effect of these two large treatment works and the reduction of Corn Products pollution should result in very appreciable improvement in the condition of the river from Peoria up to Starved Rock. The upper river will not show as marked improvement. The deep waterway pools will not be in satisfactory condition until all settleable solids are removed from the sewage and the residual organic matter is oxidized. When this is accomplished, and assuming that nearly the same amount of diversion will be permitted as under the present permit, namely 8,500 c.f.s., the river above Peoria should be in very satisfactory condition. If the diversion is reduced to the negligible amount mentioned in the Supreme Court decision it is quite doubtful whether satisfactory conditions will obtain in the upper River.

The possibility that a drastic reduction might be enforced is of serious concern to Peoria and other towns below Peoria. Remarkable progress

is being made toward the solution of Peoria's treatment problem but this problem is so difficult on account of the enormous effect of industrial wastes that a satisfactory outcome will depend to a considerable degree upon the amount of dilution available in the river. The most recent figures for Peoria industrial wastes based upon recent surveys and analyses made in our Peoria laboratory indicate that the industrial wastes of Peoria may be equivalent to 1,100,000 population. Comparisons of the Peoria industrial load with reference to the human population and some data for several other cities are given in Table III. These figures indicate that Peoria

TABLE III
Populations and Industrial Wastes

City	Human Population	Industrial Waste Population Equivalent	Per Cent Decrease
Chicago (San. Dist.)	3,560,000	1,410,000	40
Milwaukee	600,000	300,000	50
Indianapolis	351,000	290,000	83
Ft. Worth	160,000	160,000	100
Decatur	40,000	300,000 (1926)	750
Peoria	90,000	1,100,000	1,200

has the heaviest burden of industrial pollution of any of the six cities listed. It is probable that the Commercial Solvents wastes may have the highest population equivalent of any single plant in the United States. There is reason to hope that large reductions may be made in the concentration of these wastes by recovery processes similar to those that have been installed by the Corn Products Company. Such recoveries are certainly advisable if research indicates that they are feasible.

For the future the degree of treatment of the Peoria sewage and wastes will be governed, to a large extent, by the amount of dilution available in the Illinois River in mid-summer. For this reason Peoria should be interested in the question of diversion of lake water as well as Chicago. Sanitary conditions of the Illinois River demand that a reasonable degree of clearness and purity obtain after all possible measures have been taken to treat sewage and industrial wastes. These standards can be met only by continued diversion of lake water from Lake Michigan.

SURGICAL DIATHERMY IN CARCINOMAS ABOUT THE HEAD*

T. C. GALLOWAY, M. D.

EVANSTON, ILL.

In spite of all our efforts cancer still comes late to its proper treatment. Ignorance, procrastination, dread, and the false promise of inadequate and ineffectual treatment lead to fatal delay.

What should constitute proper treatment of cancer about the head has been much debated, and varies with the type, location and duration. Early, there is little question with any method, and the results are relatively certain with excision, radiation or diathermy.

The cases dealt with here are mostly of that class previously considered hopeless. For that reason we can present no imposing statistics but our experience with such patients has given us a very real enthusiasm for diathermy. Their lot is horrible, and anything that offers them hope should be repeatedly discussed. That is the reason for the presentation of what is probably common knowledge though advantage has not been fully taken of the relief that may be obtained in such cases by surgical diathermy.

Because the terrible cases that were crowding our ward and demanding some help, were mostly inoperable we seized upon diathermy for them as a last resort. The results, however, were so satisfactory that we began to use it more and more for simpler cases, and have finally come to believe that for carcinomas about the head it is the best means of treatment, with a very few exceptions.

These exceptions include small and doubtful lesions of the lip which can be treated with perhaps the best cosmetic results by excision; small basal cell carcinomas of the skin that are safely handled by excision or radium; small lesions about the eye that can be cured by radium with perhaps the least injury. Although the first results in treatment of two intrinsic cancers of the larynx led me to considerable enthusiasm for diathermy here, the subsequent course did not justify this, although I still believe small carcinomas of one cord without fixation or small doubtful tumors in older patients should re-

ceive diathermy under suspension as advocated by Novak.

Radiation therapy must be considered in connection with such cases as we are discussing. Recently a revival of the earlier enthusiasm that had rather lagged from indifferent results has come from its more intensive and studied application. Regaud of the Curie Institute in Paris, and certain English and American authors have recently reported remarkable results from the use of radium with repeated smaller doses or massive ones or from the so-called saturation method of Pfahler. As ordinarily employed, however, in serious cases I have seen little good from its use and because of it many patients who have come to us have been carried past the hope of saving only to be left with terrific and persistent pain. Radium, if unsuccessful, as Moure says, leaves little hope for other measures though it may be useful where surgery has been incomplete. The advertising of radium services implies that the ordinary medical man without special training or experience can with it get wonderful results in cancer. Many cases we have seen testify that this is a fallacy and a dangerous belief.

In small basal cell carcinomas of the skin and carcinomas of the cervix uteri, as Wood says, it has admittedly great value. In sarcomas, fibromas of the naso-pharynx, certain transitional carcinomas of the pharynx and tonsil it should have precedence. Elsewhere it may do more harm than good because it displaces more adequate treatment. Dr. James Percy from his extensive experience says: "Radio-active methods as usually employed are distinctly harmful, remotely and immediately. I have not seen any case of cancer of the tongue or neck who has lost his cancer following radium." Moure, Jackson, Clerf and others have pointed out its dangers in the larynx and McKenty thinks its use there pernicious.

The disadvantages of radium:

1. Displaces more adequate measures.
2. Produces much pain especially near bone or cartilage.
3. Produces hard scar which seals over disease and gives unwarranted sense of security and hides its failure until too late.
4. Is an easy method of exploitation or negligence.

*Read before Section on Eye, Ear, Nose and Throat, Peoria, May 22, 1929.

*From the Service of Oto-laryngology, Cook County Hospital.

Advantage of surgical diathermy. (After Miligan, Schmidt and others.)

1. Relative bloodlessness and lack of shock.
2. Blood and lymph spaces are sealed—there is little danger of inoculation metastases.
3. Heat generated in the tissue sterilizes it.
4. Heat has selective destructive action on cancer cells at the border.
5. Surrounding tissue is not devitalized—healing is good with smooth scar.
6. Recurrences show within few weeks and can be destroyed.

(In one successful case we destroyed new growth five times before we got it all.)

7. Many cases obviously inoperable are amenable to diathermy—as tumors of the sinus, palate and pharynx.
8. It is easy and rapid, precise and controlled.
9. Pain does not follow and precedent pain is relieved. (One of our greatest satisfactions has been the relief of pain caused by radium, especially near bone or cartilage.)

Technic. To briefly discuss technic, we use for coagulation a standard high frequency instrument giving a steady effect using a low or medium voltage and fairly high amperage, the amount being determined by its visible effect. A lead plate strapped with adhesive between the shoulders has proven the most practicable indifferent electrode. The cutting current may block out the whole tumor but more often a needle electrode is used to circumscribe the growth, and for precise effects; and we use the smaller and middle sized buttons to insure coagulation of sizable masses. Coagulated tissue is removed by the curette or scissors and coagulation carried definitely beyond the growth. The feel, developed by experience, of the needle in malignant tissue is a valuable aid to sight. Bone is killed if involved with the knowledge that it will cleanly sequestrate. Finally, the surface is desiccated and carbonized to prevent bleeding and to form a matrix that will stop premature separation, and we now rarely do tracheotomy simply to prevent aspiration. Ligation of important vessels, especially of the external carotid or lingual arteries, is usually advisable both to make the operation bloodless and to prevent secondary hemorrhage that may come from a large trunk when coagulated tissue sloughs. Great patience and thoroughness is required, though, unlike

cutting surgery if we fail to get all of our new growth at first active proliferation is rare.

Our first important lesson with diathermy was that these cases must be treated courageously. Half way measures may do more harm than good and all of the malignant tissue must be destroyed, with a reasonable surrounding area, even if all except the most vital structures must be sacrificed. Nature heals rather kindly even very mutilating diathermy wounds and these patients, plucked from a terrible death, are grateful and contented, in spite of considerable defects.

The problem of anesthesia was at first a great difficulty. Now in many patients with preliminary scopolamine and morphin we get excellent results with block anesthesia or infiltration though, of course, great care is taken that the needle goes through no cancerous tissue. In other cases, we have found colonic ether after the method described by Frazier wonderfully satisfactory. Several misadventures with chloroform made us appreciate especially this substitute and we find that with it we get relaxation enough even for suspension laryngoscopy, supplementing with drop ether if necessary up to the time of coagulation, and the danger of post-operative pneumonia seems almost gone.

Cancer of the skin or auricle, especially if at all extensive, is a particular field for diathermy as metastases may be very late. If the growth is small, monoterminal, direct or indirect diathermy is simple and efficient. A punctate area can with a very light current be removed with no visible scar. Larger areas can be circumscribed and removed almost to any desired depth. If cartilage or bone is involved it should be destroyed and the dead bone will separate in a few weeks.

In the nose or antrum exposure can be made through the palate or canine fossa or with a Nelaton flap, though we have found that the first exposure must be free, for best final results. If the skin of the cheek is already involved it may be destroyed by way of approach.

Cancer of the tongue is very satisfactorily treated if papillary and if on the margins or tip. If ulcerative and especially if far back, infiltration along the muscle bundles is usually rapid, considerably more must be removed and the results have not been so good.

Our carcinomas of the tonsil and pharynx have

not been seen early, extension has usually involved the great vessel and results have generally been only palliative (unlike MacKenzie's reports).

Results are better if the epiglottis is the site.

Dissection of the regional glands if enlarged seems important and we believe with Trotter, Patterson, Dan MacKenzie and other English operators that gland dissection should precede diathermy by ten days to two weeks because the area is clean and the patient's nutrition such that the procedure gives no serious shock. New, however, argues that secondary metastases may take place through newly established lymph drainage, and advises that gland dissection precede diathermy.

As most of these carcinomas about the head give general metastases only late, by hammering at the local areas we can frequently get real results. Altogether from a rather hopeless attitude in the face of cancer about the head, with diathermy we are mustering greater assurance as we see more of its results and feel very strongly we are successfully stopping many more early cases and greatly widening the field of operability in late ones.

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DISCUSSION

Dr. George W. Boot, Chicago: The cases mentioned are the class of cases we get, cases that look absolutely hopeless, at the County Hospital. The results are conclusive.

Dr. Frank J. Novak, Jr., Chicago: I wish to subscribe to everything Dr. Galloway said in regard to the use of diathermy in treatment of malignant lesions about the head and neck. I think the secret is that one must be courageous; one must be heroic. Destruction of tissue must be extreme. You cannot worry about the cosmetic result if you expect to accomplish your purpose. The use of diathermy in the larynx is easy, and while Dr. Galloway said that small lesions are amenable to this treatment, I would say that any lesion is amenable, regardless of size, providing that it is strictly intrinsic,

and that metastatic involvement of the tissues outside of the larynx has not occurred.

Dr. M. Reese Guttman, Chicago: During five years association with Dr. Joseph C. Beck I have had an opportunity of observing the results of diathermy in carcinoma. It is unfortunate that so many come too late, delayed frequently by being subjected to x-ray and radium therapy. Radiotherapy of malignancy of the head and neck except for the relatively benign skin carcinomata, is useless. Furthermore we do not know that diathermy will destroy a malignant cell before it affects normal tissue. Consequently we must choose our cases carefully. Any case to be amenable to electrologic surgery, must be well localized without local or general metastasis, and these offer the best chances for cure. We all have difficulty with the ether anesthesia on account of the sparking during electrologic procedures. We are using Avertin, also known as tribromethylalcohol rectal anesthesia, first introduced in this country by my brother, Dr. Joseph Guttman. Many of you in Chicago have seen this used by Dr. Beck, Dr. Lederer and myself. Dr. Theobald has just used it at St. Lukes Hospital. There is one point that should be mentioned. In electrocoagulation one must be careful to first ligate the carotid artery as not infrequently serious secondary hemorrhage may occur. Since we have insisted upon a primary ligation of the carotid we have not had any secondary hemorrhage.

Dr. M. H. Cottle, Chicago: I have gone to the County Hospital on several occasions when Dr. Galloway presented a series of his cases. I was much impressed by his work, not only with the fact that he had achieved such remarkable results but also because of technic in handling the cases. Diathermy is not as easy to use correctly as it sounds. It is not just turning on the switch and letting the sparks fly where they will. He knows apparently just what he wants and where he wants it, and when you see the ease with which he does it, you might confuse simplicity with ability.

Dr. Thomas C. Galloway, Evanston: (in closing) I think we should not go out with the idea that we can cure all of these cases or the majority of them but we are certainly getting somewhere in the treatment of cancer about the head. Dr. Boot has been the inspiration of much of the work at the Cook County Hospital. He had kept us plugging at it when we thought the cases were hopeless. Novak was the pioneer in diathermy about the head around Chicago, and showed us the way. I rather expected to get a rise about radium and thought it would have some friends here. We have felt that radium has done a good deal of harm by tiding over the time when something could have been accomplished by diathermy. I think diathermy can do what radium can do and more. Wright of England shows a method of treating cancer of the esophagus; diathermy is used with a bougie electrode to widen the passage and has been found palliative. As to the current used it is a matter of experience. You cannot take it arbitrarily. You must adjust your machine to the resistance of the patient, and the tissues you are working on. We use much coagulation and little desiccation; in the east they use much desiccation.

ELECTRICAL BURNS*

HART ELLIS FISHER, M.D., F.A.C.S.

Chief Surgeon Chicago Rapid Transit Company

CHICAGO

Mr. Chairman, Members of the Illinois State Medical Society, and Guests:

It is a pleasure and honor to have this opportunity of bringing to your attention for discussion the subject "Electrical Burns" which, to my mind, is in need of your co-operation to bring it to a more scientific basis of treatment than it enjoys today.

The selection of this type of burn for discussion has been determined by our familiarity with electrical accidents, having been associated for the past seventeen years with a number of the large public utility companies of Chicago and Illinois. During that time, through our Medical Department, we have had the opportunity of observing large numbers of these cases both under our personal care and under the care of our colleagues. We have witnessed practically all the various methods of burn treatment which, as you know, are legion. From the wealth of material at hand we were able to arrive at a conclusion as to the advantages and disadvantages of this large variety of therapeutics relating to burns.

Our intention is not to present any new methods in this field, which is already overcrowded, and we have nothing new or startling to offer. Our sole purpose is to refresh your minds, if you please, and to make the suggestion that burn therapy be given greater scientific consideration by our profession. A thorough scientific research is needed regarding methods of treatment of electrical as well as fire, steam and hot liquid burns, which will result in a standardization similar to the vast improvement in the treatment of fractures evolved over the last few years.

The old, obsolete and widely varying methods of treatment are directly responsible for prolonged convalescent periods with their accompanying economic loss to the patient and his dependents. Lack of scientific management of these injuries has resulted in complications, deformities and frequently fatal terminations of what appeared in the initial stages to be trivial injuries or burns of trifling degree. No longer, we believe, are burn cases left to the initiative

of nurses or internes but it is imperative that we give to these cases the same careful consideration and apply the same aseptic, surgical technique used in abdominal surgery which, we have learned, is so essential.

In the past decade, the electrical industry has made vast strides in the production and distribution of electrical energy in the form of light and power. It is still in its infancy and each day witnesses some new use demonstrated for this form of energy, both in the home and in the fields of manufacture and commerce. The constant and ever increasing consumption of electrical current of high voltage brings with it a mounting toll of electrical accidents. Wonderful achievements have been accomplished by the large power companies in safeguarding their employes and customers from the hazards of electrical force but notwithstanding their success in accident prevention, there still is and will continue to be, a great number of injuries of this class to be treated by the medical profession.

Doctors who do not see this class of injury frequently are oftentimes unaware that many of the most serious burns and electrocutions result from currents of low voltage. The severity of an electrical burn depends upon the nature of the current (whether alternating or direct), the voltage and amperage of the current, the character of the ground connection, duration of contact and the extent of surface involved. Electrical injuries are classified as follows:

Electrical shock, where the patient is electrified to a point where there is an apparent suspended animation with an arrest of respiratory effort.

Electrical flashes or glare injury to the eyes.

Electrical burns of a first degree with a simple hyperemia of the skin surface which has a dry appearance, early blister formation and pain.

Second degree burns where the continuity of the skin surface is destroyed.

Third degree burns where there is destruction en masse of the tissue, perhaps including muscle, nerve and bone.

Experience has demonstrated that where there is fair contact with electrical current of sufficient voltage, there will be found on the anatomy what is known as the "contact spot" which marks the

*Read before the Section on Surgery, Illinois State Medical Society, Peoria, May 21, 1929.

current's ingress or egress, or both. This may be pinpoint or large in size, but it is there for the looking and is important from a medical-legal standpoint. Difficulty is often experienced in determining the extent of burned area and its depth of penetration and great care should be exercised in the prognosis of this type of burn case since many burns appearing trivial in the first twenty-four hours later become critical or fatal. Experience has taught us to be guarded and treat all burns as serious until sufficient time has elapsed to make prognosis a certainty.

There is an immediate electrical shock to the nervous system accompanying all electrical burns which is a prominent factor in reducing the patient's resistance to pain and which also delays the normal reaction time. Many patients die from electrical shock in the first twenty-four hours on account of respiratory failure or heart block and this has often lead to the erroneous belief that death was due to burns or so-called static pneumonia. After a few days a secondary toxic shock ensues which is due to the absorption of toxins from the destroyed tissue and may be accompanied by bacterial invasion. This toxic shock has very often resulted in death which was attributed to pneumonia because the nature of the pathology at hand was not understood.

The initial entrance of the electrical current into the body shocks a patient's mental and nervous equilibrium, inducing in him a state of fear and apprehension. This is greatly aggravated by excitement and mishandling within the first few hours after the accident.

Electrical burns in themselves are primarily aseptic by reason of the sterilization obtained from the tremendous heat generated in the arcing of the current and the body. The burns are often multiple, one appearing where the current entered the body and the other where the current left the body when contact was broken. The tissues present a charred, cooked appearance, the surface is dry, dehydration is marked, the wounds are clean cut in outline, and later a definite area of hyperemia surrounds the burned area. Hemorrhage is practically absent even when large blood vessels have been destroyed but secondary hemorrhage is one thing to fear and hard to control when once established. Generally, secondary hemorrhage follows after shock has been controlled and the arterial tension rises.

A patient may be delirious or unconscious, a rapid, thready pulse is felt, there may be rapid, shallow respirations of the hunger type or almost complete absence of same, and an anxious face, pale skin with dry surface due to depletion of body fluids. Temperature may be subnormal and later begin to rise and if this continues, it is almost a fatal sign. Prostration is marked, the patient moving very little on account of pain and fear, even where pain is absent. The kidney function is diminished on account of dehydration of body fluids and this is a sign of utmost importance. Thirst is present in a large percentage of cases.

What constitutes good management in electrical burn cases? Please bear in mind that these suggestions are offered in the hope that our experience may prove of some value. Since a large percentage of electrical burns occur in outlying localities not immediately accessible to doctors, it is most essential that the lay workman be instructed how to render resuscitation from electrical shock and how to protect the burned area until medical aid arrives. All employees of the public utility companies with which we are connected have been instructed in the above principles which consist of the Schaefer Prone Pressure method of artificial respiration, application of sterile gauze to the burn and immediate transportation of the patient to the nearest doctor or hospital.

Severe cases require treatment of shock in a hospital with rest in bed, complete relaxation and sufficient dosage of morphin to secure freedom from pain. Fluids should be forced at once by mouth and normal saline or a hypertonic saline should be given by transfusion or hypodermoclysis. The latter should be done with caution on account of the possibility of lung congestion. Kidney function should be restored early and this is one of the guides to the prognosis of the case. Sodium bicarbonate by mouth is of value in establishing the alkaline balance in the body. Placing a patient in semi-Fowler position and frequently changing same will often prevent respiratory complications. Very often, patients are unable to relax on account of trying to avoid pressure on burns. This is a further strain on their resistance and can be overcome by the judicious placing of pillows and sand bags. The patient should be placed on sterile sheets and a cradle made with a sheet placed so as to pre-

vent the pressure of bed clothes. One or two carbon filament electric bulbs placed under the tent will maintain the body heat and avoid the possibility of chilling the patient. The heat also serves to induce moisture or elimination from the skin.

Where possible, surgery should be withheld until later hours, after shock has been arrested. Application of sterile petrolatum without bandaging is sufficient until one of the preferred burn treatments is at hand. We have used petrolatum for first and second degree burns only, and believe that greases, ointments and salves are only indicated in these two types of burns. They are messy and gruesome and make the patient uncomfortable. They favor bacterial growth and when it is necessary to remove them in favor of other therapy, there is great difficulty and pain.

In the initial stage, in serious burns of the second and third degree type, the treatment indicated is tannic acid application. A two or five per cent. aqueous solution of tannic acid is sprayed on the burn with an atomizer and repeated until the wound appears a dark brown or mahogany color. If a spray is not available, apply on loose gauze. There is almost an immediate cessation of pain and the patient experiences relief in body and mind. The tough membrane that forms on the burn surface will, in ten days, begin to curl at the edges and separate, leaving healthy tissue beneath. In third degree burns the membrane will separate within twenty-four hours, due to the exudate from the wound and will require subsequent applications of the tannic acid. If sepsis appears, it is important that this membrane be removed surgically under anesthesia and the septic wound treated as any other infected wound. It is suggested that a trial be given the normal horse serum with 0.35 per cent. cresol in these wounds, as advocated by Doctors Monteith and Clock after the method introduced by Doctor E. P. Robinson. The serum is said to favor the coagulability of the blood and retains the blood plasma in the wound. It forms a physiologic base which favors tissue cell growth. The cresol acts in a bactericidal manner and as a preservative to the serum. Infection in burn cases may be controlled, as recommended by Doctors Blackfoot, Bennett and Browning, by a one to five thousand Acriflavin applied on

fluffy gauze. Where toxic shock is present the above method is of value but any recognized treatment for infected wounds is a matter of choice. Irrigation of the toxic wound area with sodium chloride solution reduces the absorption from toxic material. Should the slough be the offending media, it must be removed surgically under anesthesia and asepsis.

I have purposely refrained from mentioning picric acid treatment of burns as we have found it of value only in the first twenty-four hours. After that time its toxic effect irritates the tissues and may produce toxic symptoms of nausea, dizziness, gastric upset, temperature, and simulate toxic shock. We have observed that patients treated with picric acid present these signs which disappeared when the picric acid was discontinued. We have found paraffin treatment of wounds of value in first and second degree burns but not of practical use in large, destructive wounds. It requires frequent redressing with the added danger of causing sepsis in the wounds. Our technique may have been at fault, but we discarded paraffin after a few distressing infections not accounted for otherwise.

Regarding surgical procedure in burns, it is good surgery, we find and believe you will agree, to withhold all surgical procedures except emergency control of bleeding if present, until the patient has rallied from the initial shock. Opening of bleb and blister formations should be done under strict asepsis. We have observed one doctor who pinched the blisters with his fingers in order to break them. The removal of devitalized tissue should be limited to shreds that are loose and easily removable. It is better to await the separation of the slough before debridement is attempted and this should be done under anesthesia. Early debridement is difficult on account of the loss of anatomical fascia planes. The danger of producing an alarming hemorrhage, almost impossible to control, is a grave possibility. Nerve destruction is of such extent in these burns that approximation of nerves will be well nigh impossible, but after complete healing of wound, may be attempted. Injury to bone and tissue will be so great that amputation is imperative but this should be delayed until shock is overcome.

The burned area being free of infection and if there is a healthy bed of granulations, it is sur-

gically wise that early skin grafting be performed. This is to prevent disfiguring scars and contractures, especially where the burns involve the flexor surfaces of joints. We have found that the early Thirsch grafts, taken from the patient's own thigh, have given the best results. The use of a hot air dryer to assure a dry field before application of the skin grafts, is of value. Also, it is essential that there be sufficient, but not too great pressure to hold the grafts to the bed, and also proper protection of the grafts by any of the classical methods. The final admonition is to avoid too frequent inspection or dressing changing, if the operation is to be a success.

The area being of considerable extent, the use of full thickness grafts or the pedicle graft as advocated by Doctors Koch and Kanavel, being careful that the exact tension is had in suturing the graft to the healthy skin. This procedure will hasten the return of the patient to an economic basis in shorter time instead of waiting for the wound to close of itself with accompanying scars and contractures. Speaking of contractures, permit us to make the suggestion of careful posture of the part with gentle, daily active and passive motion. Where opposing surfaces of raw tissue are in contact, separate the parts, place in useful functional position and retain by use of sand bags. We have attempted plastic repair in a number of cases where the arm had become attached to the thorax and axilla by being left in contact during the healing process, and failure of complete functional restoration has occurred in some cases which might have been prevented had posture been used.

We have met with successful encouragement of healthy granulations in a number of cases by the judicious use of quartz light therapy. The use of mercurochrome has been discarded on account of the crust formation favoring germ propagation. These patients are very frequently in a greatly reduced state of resistance and a building up of the general health will be productive of granulations which appear as if by magic. Maintenance of the patient in bed until the active stage is passed and then out in the sunshine, is a very good tonic for burn cases in children and elderly people.

Physiotherapy, intelligently and scientifically applied, has a very definite part in burn therapy, in the restoration of function to a part. It will

aid in reducing contractures and in preventing fibrosis in joints from long periods of disuse. Early massage, active and passive motion and work movements are of value. Never move a part to the point where it is painful to the patient. X-ray has often been used by us to soften scar tissue and reduce keloid formation, with good results. Protection of the skin area from irritation by clothing, is a point worth holding in the prevention of keloids and irritable scars. Reparative work or plastic surgery should be held in abeyance until wounds are completely healed and free of infection. A fair guide as to the time to plan plastic procedures is when the limit of scar tissue and contractures is known.

Children stand the rigors of burns better than adults. With advancing age, mortality is higher. Apparently trivial burns over the epigastrium have resulted in gastric or intestinal perforations of a pre-existing ulceration, with fatal results.

In conclusion, permit me to sum up, as it were, those factors which to our minds and from our experience, should receive consideration:

- Treat all burns as serious, no matter how trivial.

- Combat effects of initial electric shock.

- Early use of tannic acid and normal horse serum in extensive burns.

- Avoidance of early surgical intervention.

- Prevention of toxic shock.

- Early skin grafting especially over flexor surfaces.

- Surgery of nerves and tendons when all infection has passed.

- Early scientific physiotherapeutic measures.

The above measures are directed toward the classical burn treatment which is both conservative and rational, namely, preservation of the sterility of the wound, use of the treatment which favors separation of the slough, encouragement of the growth of new granulations, combatment of the toxic shock due to toxine absorption, and returning the injured person to a gainful occupation with the least delay commensurate with welfare and safety.

With these thoughts in mind we have selected this subject and make the final plea that greater attention be directed toward this phase of injury so that there will be less of the prolonged

and disabling complications from electrical burns.

I thank you.

DISCUSSION

Dr. Hart E. Fisher (closing): We do use blood transfusions, especially where there is a septic condition and when the resistance fails to come back. We use the direct method and also a saline solution to encourage the resistance and break up and combat acidosis.

HEART DISEASE IN PREGNANCY*

PHIL A. DALY, M.D.

CHICAGO

During pregnancy there is a noticeable tendency to blame the pregnancy itself for many things.

If vomiting occurs the gravid uterus is held responsible, and it may well be, but so too may gall bladder disease, pyelitis or central nervous system derangement be the cause. Headache, nervousness and increased blood pressure likewise are frequently attributed to pregnancy without consideration of the possibility of accidental disease such as hyperthyroidism.

There is a similar tendency to emphasize the influence of pregnancy on diseased hearts and this emphasis may be directed to either extreme—to total disregard or unreasoning fear of the heart condition. Heart disease varies in pregnancy as it does under other circumstances. We have all seen the patients with heart disease survive severe pneumonias. We have all seen patients with heart disease doing hard physical labor with no apparent ill effects and patients with similar lesions able to do but the lightest work. What is more significant we have seen patients suffering from symptoms of heart failure because of excessive work incident to their occupation, who, when placed in occupations decreasing the amount of effort, become symptomless and carry on indefinitely.

Bearing of children is an occupation demanding a certain amount of rather uniform work. Patients who are subjects for this type of employment have other points in common which add to the uniformity of the group under discussion.

They have youth, they are otherwise healthy. They rarely have vasculo-renal complications.

Their usual work—housekeeping—is similar though varying in amount.

And most important, from the standpoint of heart disease itself, they are more uniformly favorable to treatment. They are the 'survivors of the fittest'; the bad cases of endocarditis of childhood have either died or become such invalids that they do not marry and become pregnant.

There are exceptions, of course, but they are comparatively rare. For the most part patients with heart disease complicated by pregnancy have had their active carditis, with or without rheumatic manifestations, some years prior and have improved to the point at which they suffer relatively little limitations.

In management of heart disease the condition we fear and hope to avoid, is heart failure. The factor most frequently producing cardiac decompensation is excessive work and the amount of work which may produce it varies greatly in individuals.

During pregnancy there is a gradual increase in work. Among the changes producing this increase are increased mass and weight, increased circulatory bed and possibly some circulatory handicaps due to the increasing tumor. These extra demands, plus the desire or necessity of the patient to carry on her regular work, may prove excessive.

The object in management is to prevent heart failure during pregnancy; if failure does not occur during the long months of pregnancy it seldom occurs because of labor. In our experience at the Chicago Lying-In Hospital, of those patients who suffered failure during pregnancy, 40 per cent also experienced some degree of failure because of labor, unless the labor was modified by obstetrical means. On the other hand if there was no decompensation during pregnancy less than one per cent developed signs of failure during labor.

Labor is a factor that cannot be estimated beforehand in terms of work, but it is usually shorter and less strenuous in cardiacs and, furthermore, it is a factor that can be controlled by good obstetrics. The surgical and obstetrical skill of the obstetrician can minimize the amount of actual work and thereby the risk of delivery. If we can carry our patient through pregnancy without failure and present her for delivery in

*Read before the Illinois State Medical Society, Peoria, May 22, 1929.

a state of good cardiac compensation, the obstetrician seldom fails to deliver her safely.

Our duty is to prevent heart failure and we may do this mainly by offsetting the unavoidable increase in work due to pregnancy by decreasing the voluntary effort of the patient. This necessitates seeing patients early—before the fourth month—at which time we can, in addition to regulation of their voluntary work as a protective measure, in many instances increase the efficiency of the heart by proper rest and exercise and the judicious use of digitalis if necessary.

The importance of early observation has been demonstrated to us by comparison of our earlier results, when patients were coming under observation at about the sixth month and the percentage of failure of some degree was about twenty, and our more recent results obtained by bringing patients under management at the second, third or fourth month, such a procedure reducing the incidence of failure to less than 10 per cent.

The type of valvular lesion makes little difference, preservation of the myocardial efficiency is the important phase and so to this end our efforts should be directed.

The method of delivery varies with the circumstances governing the individual case. Spontaneous labor and delivery is usually safe. The labors are short and easy as a rule unless there is an obstetric complication. Forceps applied when complete dilatation has occurred is a further safeguard for this method.

I believe this is the preferable means of delivery unless there are other considerations, such as occurrence of failure during the pregnancy which indicates forceps, at the earliest possible moment, or cesarean section. Old primiparae, pelvic distortion, disproportion, etc., conditions which are apt to prolong or increase labor indicate cesarean section.

Patients with heart lesions serious enough to contraindicate subsequent pregnancies and in whom sterilization is desired are probably best treated by cesarean section with sterilization at the same time.

CONCLUSIONS

1. With careful prenatal care and timely, efficient obstetric aid, heart disease and pregnancy

is not necessarily a fatal nor even fearsome combination.

2. Not every woman with heart disease should attempt pregnancy.

3. For the most part, those who should not, do not.

4. That the early care is the important phase of management in the prevention of trouble during pregnancy.

5. That the obstetrician of today with his obstetrical and surgical skill can minimize the work of labor to such a degree that the danger from delivery is little more than that of pregnancy.

THE IMPORTANCE OF AN X-RAY EXAMINATION OF THE GENITO-URINARY TRACT IN OBSCURE ABDOMINAL AND BACK PAINS

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CHICAGO

An analysis of cases presenting abdominal and back pains emphasizes the fact that diseases of the kidney and ureter do not usually present a clear cut clinical syndrome. It is interesting to note the diversity of lesions of the genito-urinary tract which simulate other abdominal and back diseases.

A statistical survey by Nichols¹ of a large number of patients shows that more than 30% of their cases in whom a definite pathological condition of the right kidney was discovered had previously undergone operations for some condition not related to the kidney; and the subsequent history indicated that in many cases the symptoms had not been relieved. One should not infer from the previous statement that in many cases the surgical treatment was not justified, as not infrequently multiple abdominal lesions exist. The fact remains that too often an exact diagnosis is extremely difficult, and that one should not fail to utilize the precise methods of analysis which science has made available.

Because of the multiplicity of abdominal and back lesions simulated by genito-urinary disease an exploratory operation is not wholly justified until an X-ray examination of the genito-urinary tract has been made to ascertain whether

or not that organ may be in part or wholly responsible for the pain.

It has often been stated that the patient cannot afford an X-ray examination. This condition, in my opinion, is more apparent than real, as not infrequently the information obtained from a roentgenological examination may save the patient the expense, inconvenience and discomfort of a needless operation.

The following cases are illustrative of the importance of an X-ray examination of the genito-urinary tract in obscure abdominal and back pains.

Case 1. A female, aged 22, was admitted to the hospital with a past history of having an appendectomy two years ago.

Present Complaint: The patient has complained of pain in the right lower abdomen and back with attacks of nausea and vomiting every three months for the past two years. An appendectomy two years ago did not alleviate the symptoms.

Roentgen Findings, October 5, 1927: X-ray examination of the genito-urinary tract revealed a stone in the pelvis of the right kidney. The calculus was displaced into the upper calyx of the kidney subsequent to the insertion of an opaque radiographic catheter into the right ureter. Roentgenograms taken in the lateral view revealed that the calculus was located at the anatomical site of the pelvis of the right kidney. Roentgenograms taken in the A.P. and lateral views, subsequent to the injection of 8 c.c. of sodium iodide into the right ureter, revealed that the shadow of the calculus was obscured by the iodide. The major and minor calyces were increased in size and there was a clubbing of the minor calyces. The findings are those of a stone in the upper calyx of the right kidney associated with the findings resultant from a hydro nephrosis.

Cystoscopic Findings: Cystoscopic examination revealed that the mucous membrane was slightly congested. There was normal spurting from both ureters and clear. The catheters were passed with ease on both sides.

Remarks, May 11, 1928: A right nephrostomy was performed and a stone was removed from the upper calyx of the right kidney about the size of a jelly bean; the patient made an uneventful recovery.

The important feature in this case is that the lesion in the right kidney so closely simulated an appendicitis that an appendectomy was performed with no relief of the symptoms until the stone was removed from the right kidney.

Case 2. A male, aged 39, was admitted to the hospital with a past history which was not remarkable. Present Complaint: The onset occurred ten months ago when the patient stated he injured his left back. Since that time he has complained of recurrent pains in the upper left back region. The pains radiate down

to the sacrum and to the left leg. Recently there was some frequency in urination.

Laboratory Findings: Occult blood in the urine. Roentgen Findings, May 12, 1928: X-ray examination of the genito-urinary tract revealed that the right kidney was negative. On the left there was a shadow of increased density at the anatomical location of the pelvis of the kidney. Roentgenograms taken in the lateral view revealed a well defined shadow of density, that of stone, in the anatomical site of the pelvis of the kidney. The findings are those of a stone in the pelvis of the left kidney.

Remarks, May 12, 1928: Operation, nephrotomy. A stone was removed from the pelvis of the left kidney.

The interesting feature in this case is that the patient attributed the attacks of pain to his injury which in point of view of the history of the case is somewhat misleading.

Case 3. A male, aged 43, was admitted to the hospital with a past history of typhoid fever twenty-five years ago.

Present Complaint: For the past year he has had indigestion. Ten days ago, the patient had an acute onset of general abdominal pain which was diffuse in character and associated with right back pain. There was nausea and vomiting. There were no urinary symptoms.

Roentgen Findings, April 20, 1928: X-ray examination of the genito-urinary tract revealed a faceted calculus at the site of the pelvis of the right kidney and at the site of the gall bladder. Roentgenogram taken in the lateral view revealed that the calculus was well seen at the region of the pelvis of the kidney and which was extrinsic of the gall bladder. An examination of the gall bladder by the Graham method revealed that the gall bladder was normal. An X-ray examination of the gastro-intestinal tract was negative. The findings are those of a stone in the pelvis of the right kidney at what appears to be the pelvic-uretero junction. There is an enlargement of the kidney. The gall bladder, stomach and appendix are normal.

Cystoscopic Findings: Cystoscopy refused.

Remarks, April 21, 1928: Operation revealed an enlarged kidney with an inflammatory mass about the pelvis of the kidney; the stone was not palpable. A nephrectomy was performed and a stone was removed from the inflammatory mass at the site of the kidney pelvis. There was an associated pyelonephritis.

The interesting feature in this case is that the lesion at the right kidney very closely simulated gall bladder colic.

Case 4. A male, aged 67, was admitted to the hospital with a past history of prostatectomy and strictures, in 1916.

Present Complaint. The patient had been well until four months ago, when he complained of pain in the left lower quadrant, constipation, shortness of breath and weakness. There were no genito-urinary symptoms.

Roentgen Findings, July 27, 1926: X-ray examination of the genito-urinary tract revealed a large branching calculus of the left kidney occupying the pelvis and calyces. Cystoscopic Findings. Examination was not done.

Remarks, July 28, 1926: A left nephrectomy was performed. Section of the kidney revealed a large amount of purulent material with a large branching calculus.

The important feature in this case is that the lesion of the left kidney simulated lower abdominal pathology which was more suggestive of malignancy of the bowel.

Case 5. A female, aged 39, was admitted to the hospital with a negative past history.

Present Complaint. The onset of the illness was four months ago when the patient complained of pain in the right abdomen and back, radiating downward. There were no genito-urinary symptoms.

Roentgen Findings: X-ray examination of the genito-urinary tract revealed several small shadows of increased density consistent with calculi at the region of the lower calyx of the kidney. Film taken after the injection of 7 c. c. of sodium iodide revealed that the calculi were partially obscured by the shadow of the iodide in the calyx and the calyx at this region was blunt and had lost its saucer shaped expansion. The upper calyx revealed some irregular fuzziness. The findings are those of several stones in the lower calyx of the right kidney associated with the findings seen resultant from a hydronephrosis. These findings are consistent with a tuberculous kidney.

Remarks. The interesting feature in this case is that the lesion of the right kidney simulated lower right abdominal and back pain of obscure character as to the etiology.

Case 6. Male, aged 44, was admitted to the hospital with a past history which was negative.

Present Complaint. The patient complained of pain in the lower abdomen, first on the right side and later on the left. The onset of pain was one year ago. There was no genito-urinary complaint.

Laboratory Findings. Occult blood in the urine.

Roentgen Findings, November 8, 1928: X-ray examination revealed a calculus in the lower right ureter approximately 1 cm. from the bladder orifice. November 20, 1928: X-ray examination of the genito-urinary tract revealed no stone at the site of ureter as previously described.

Cystoscopic Findings. Right ureteral orifice inflamed and edematous. No spurting of urine. Left side normal. The right ureter was dilated.

Remarks: November 9, 1928, or the night following ureteral dilatation, the patient passed the calculus with subsequent relief of symptoms.

Case 7. A female, aged 21, was admitted to the hospital with a past history of having had an appendectomy in 1925.

President Complaint. For the past two years, patient had complained of right backache associated with

severe cramp-like pain in the right lower quadrant, more marked for the last three months. For the past three months there have been attacks of chills, fever and vomiting. Roentgen Findings, April 6, 1927: Roentgen examination of the genito-urinary tract revealed the uninjected film was not remarkable. Films taken of the genito-urinary tract subsequent to the injection of 7 c.c. of sodium iodide into the right ureter revealed that the pelvis and the major and minor calyces were increased in size, and the calyces revealed clubbing. The minor calyces have lost their saucer shaped expansion. The infiltration of iodide into the parenchyma of the kidney is consistent with a necrosis of the kidney substance at this region. The ureter was also increased in size. The findings are those of a hydro-uretero-nephrosis accompanied by a destruction of the kidney substance in the upper calyx. Findings of this character are due to tuberculosis.

Cystoscopic Findings. Left ureter normal and spouting clear fluid. Right ureteral orifice inflamed and edematous. Urine cloudy.

Remarks, April 8, 1927: Operation—right nephrectomy and ureterectomy. Pathological findings: Tuberculosis of the kidney and ureter.

The important feature in this case is that the lesion in the right genito-urinary tract so closely simulated an appendicitis that an appendectomy was performed with no relief of symptoms. The patient at the present time is perfectly well.

Case 8. A male, aged 32, was admitted to the hospital with a past history that was not remarkable.

Present Complaint. For the past eight years, patient has complained of left back pain and from time to time has passed some stones. However, at present time there are no urinary symptoms.

Laboratory Findings. Revealed occult blood in urine.

Roentgen Findings, December 13, 1926: Roentgen examination of the genito-urinary tract revealed the kidney on the right was obscured by gas and fecal material. However, the catheter in the right ureter lay very close to the spine, and was rather parallel to the spine. There was no demonstrable evidence of opaque calculi in the right genito-urinary tract. On the left the tip of the radiographic catheter lay opposite the transverse process of the second lumbar vertebra and was a considerable distance away from the spine. There was a marked amount of calcareous degeneration and calculi in the kidney region. The shadow of the kidney was somewhat low and it was superimposed over the shadow of the psoas muscle. The kidney was close to the lumbar spine. Conclusions. Radiographically, the findings of a kidney whose shadow superimposes that of the psoas muscle and lies close to the spine and parallel to it, and associated with a kidney which is slightly low in position and rotated, are characteristic of the findings seen in horseshoe kidney. The findings of an irregularity of the kidney with calcareous degeneration and calculi are consistent with the findings seen in tuberculosis;

namely one-half of the horseshoe kidney is tuberculous.

Cystoscopic Findings. Right ureteral orifice normal. Normal spurting and clear. Left ureteral orifice inflamed. Urine cloudy. A pyelographic study was refused.

Remarks, December 16, 1926: Operation revealed a horseshoe kidney with gross tubercular involvement of one-half to the left of the spine.

The important feature in this case is that the pain in the left back was obscure. However, the history of passing stones with a laboratory finding of blood in the urine certainly makes one very suspicious of disease of the kidney. However, a case of tuberculosis in one-half of a horseshoe kidney is certainly a very uncommon one, and the most important aspect is that the roentgenological examination may elicit the diagnosis of a horseshoe kidney.

Case 9. A female, aged 51, was admitted to the hospital with a past history of having had a right nephrectomy two years ago, and prior to that time, a left mastectomy and pan-hysterectomy.

Present Complaint. Patient complained of pain in the left upper abdomen which was associated with a general backache. The pain at times was agonizing in character, and most of the time dull. There were no urinary symptoms. No blood in the urine. No loss of weight.

Roentgen Findings, October 12, 1927: Films taken of the genito-urinary tract revealed that the kidney shadow on the right was not visible. On the left the shadow of the kidney was increased in size and the lower pole has somewhat of a lobulated appearance. There was no evidence of opaque stones in the left genito-urinary tract, nor was there any evidence of calcareous degeneration in the kidney. The findings of a kidney which is increased in size, whose lower pole reveals a lobulated appearance, in the absence of calcareous degeneration is consistent with a polycystic kidney.

Remarks. The important feature in this case is that the etiology of the pain was obscure. However, the roentgen findings in conjunction with a history of a right nephrectomy two years ago, with a pathological report of a polycystic kidney, with a knowledge that polycystic kidneys are practically always bilateral, makes a diagnosis at the present time possible. Under medical management the patient made an uneventful recovery.

Case 10. A male, aged 32, was admitted to the hospital with a past history which was not remarkable.

Present Complaint. For the past eight months the patient had complained of epigastric distress and headaches. An acute attack was characterized by severe pain in the right back and vomiting with epigastric distress.

Roentgen Findings, January 12, 1927: Subsequent to the insertion of an opaque radiographic catheter into the right ureter examination of the genito-urinary tract revealed that the tip of the opaque catheter was seen in the mid-portion of the sacrum, and the catheter was coiled at the region of the lower end of the ureter. The kidney shadow on the right was fairly well visualized and as far as could be determined was not particularly increased in size. Roentgenogram taken of the genito-urinary tract subsequent to the injection of sodium iodide into the right ureter revealed that the ureter was considerably increased in size, and was very tortuous. The coils of the catheter which was previously described lay in the dilated ureter. There was no reflux of iodide into the bladder. The pelvis and calyces were likewise considerably dilated. The findings are those of a marked degree of hydro-uretero-nephrosis, resultant from a ureteral stricture, at what should be about the vicinity of its orifice in the bladder.

Cystoscopic Findings. Revealed that the left ureter was not remarkable. The right ureteral orifice was inflamed, however, spurting. The stricture was dilated as was done on another subsequent occasion.

Remarks. The important feature in this case is that a stricture of the ureter resulting in a marked hydrouretero-nephrosis, simulated gastric and gall bladder disease.

Case 11. A female, aged 46, was admitted to the hospital with a past history which was not remarkable.

Present Complaint. Onset ten days ago. Patient complained of pain in the right lower back region with constant desire to urinate. The physical findings were those of a large tumor mass in the lower left abdomen.

Roentgen Findings, August 26, 1926: Examination of the genito-urinary tract revealed that the left kidney was fairly well visualized and appeared to be not remarkable as to size, position and no evidence of calculi. There was a well defined shadow of homogeneous increase in density which was situated in the left pelvis and abdomen. The character of the shadow is consistent with that often seen in fibroids of the uterus. The right kidney was not remarkable. Roentgen diagnosis. There is no evidence of opaque calculi in the genito-urinary tract. The kidneys appear to be normal in size, position and outline. The findings are consistent with a large fibroid of the uterus situated in the left pelvis and abdomen.

Cystoscopic Findings. The cystoscope was introduced into the bladder with difficulty, due to an extrinsic tumor mass which was pressing down and distorting the bladder. Urine from the left ureter slightly cloudy. Urine from the right ureter was cloudy. Pyelographic study was not made.

Remarks. Laparotomy revealed multiple large fibroids which were obstructing the ureters and resultant in acute pyelitis. A hysterectomy was performed.

The interesting feature in this case is that the pain was in the right back, accompanied by

a constant desire to urinate and associated with a tumor mass in the lower left abdomen, and that the acute pyelitis was due to an extrinsic obstruction of the ureters.

Case 12. A male, aged 65, was admitted to the hospital with a past history that one year ago he had a cystoscopic examination of the bladder, and he was told that he had a tumor.

Present Complaint. Patient states that for the past year he has had pain in the right abdomen associated with nocturia. Very recently he has expectorated blood.

Laboratory Findings. Revealed occult blood in urine.

Roentgen Findings, September 11, 1926: Roentgen findings revealed that the left kidney was not remarkable. On the right the kidney shadow extends from the twelfth dorsal spine to below the crest of the ilium. Roentgenograms taken of the chest revealed multiple metastases. Roentgen diagnosis. The increase in size of the right kidney with the findings of metastases in the chest is consistent with a hyper-nephroma of the right kidney with pulmonary metastases.

Cystoscopic Findings, September 11, 1926: Cystoscopic examination revealed bloody urine in the bladder and no evidence of a tumor. There were, however, numerous blood clots. Urine from the left ureter was clear and from the right bloody. Pyelographic study was not made.

Remarks, September 14, 1926: Right nephrectomy. The kidney was about the size of a grape fruit. Pathological findings were hyper-nephroma.

The important feature in this case was that the right abdominal pain associated with nocturia is not indicative of a kidney tumor. However, the roentgen findings of a very large tumor of the right kidney with metastases to the lungs makes an obvious diagnosis.

Case 13. A male, aged 59, was admitted to the hospital with a past history that was not remarkable.

Present Complaint. Patient states that for the past year he has had gas pains associated with nausea, vomiting and weakness. There was occasional marked epigastric distress. He has lost thirty-five pounds in one year. There was no genito-urinary complaint.

Roentgen Findings, April 13, 1928: The left kidney was not remarkable. The right kidney was considerably increased in size, extending from the twelfth dorsal to below the crest of the ilium. Roentgen examination of the gastro-intestinal tract revealed the stomach was normal. The ascending colon was displaced to the left and invaginated by an extrinsic tumor mass at the region of the kidney and free from the colon and liver. Roentgen diagnosis. The findings are those of a large tumor of the right kidney which has considerably displaced the ascending colon to the left. In all probability this tumor is a hyper-nephroma.

Cystoscopic Findings. Examination not done.

Remarks, April 18, 1928: Operation revealed a

large kidney tumor which on section was a hyper-nephroma. The interesting feature in this case is that the clinical findings very closely simulate malignancy of the gastrointestinal tract.

CONCLUSIONS

1. Diseases of the kidney and ureter do not usually present a clear cut clinical syndrome.

2. Lesions of genito-urinary tract frequently simulate other abdominal and back diseases.

3. Because of the multiplicity of abdominal and back lesions simulated by genito-urinary disease an exploratory operation is not wholly justified until an x-ray examination of the genito-urinary tract has been made to ascertain whether or not that organ may be in part or wholly responsible for the pain.

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THE USE OF ORANGE JUICE MILK IN INFANT FEEDING*

KING GRIER WOODWARD, M. D.

ROCKFORD, ILL.

The baby of today who is unfortunate enough not to receive breast milk must cast its lot with myriads of others who are fed on formulae ranging from the canned milks to the simple cow's milk and water mixtures depending upon the choice of the practitioner. Fortunately the infant's digestive apparatus is elastic enough to adapt itself to many of the numerous methods of feeding. It is impossible to follow any one set formula or method and the practitioner who is called upon to prescribe a formula must not only understand the basic principles of infant food requirements but also be able to make adjustments to take care of digestive disturbances as they arise.

The use of acidified milk has held an important place in infant feeding in recent years, and it is one form of this subject that I wish to discuss today; namely, "Orange Juice Milk."

I can claim no originality in this field nor do I offer a panacea for all feeding problems, but hope to bring before the general practitioner a

*Read before the Section on Medicine, Illinois State Medical Society, Peoria, May 23, 1929.

highly satisfactory method from the standpoint of physician, mother and baby.

Dr. Julius Hess and his coworkers¹ have ably demonstrated the value of orange juice added to milk, in that it modified peptic digestion and increased the amount of soluble proteins. Hess and Matzner² in their work on lemon juice and orange juice in milk found that the hydrogen ion concentration was altered from a pH of 6.5 to a pH of approximately 5.4. In addition to the above mentioned factors the mineral constituents as well as the antiscorbutic vitamins are increased.

In the preparation of orange juice milk one ounce of strained orange juice is used to each sixteen ounces of milk.³ The quantity of milk prescribed when beginning the formula should be two ounces per pound of body weight, and cane sugar added in the proportion of one-tenth of an ounce per pound of body weight. If greater volume is desired water may be added in sufficient quantities. It has been my practice to advise the mother to boil the milk and water in a single boiler for two minutes, add the sugar, and then cool the mixture thoroughly before adding the orange juice.

I have used this type of formula in premature infants, during the first few days of life before the establishment of breast milk, as a complementary feeding, and in the ordinary bottle fed infant with highly gratifying results. For the past three and a half years every infant admitted to the Rockford Children's Home has been given orange juice milk until they were ten or eleven months old, when whole milk was used. In comparing two hundred cases in private practice fed orange juice milk with an equal number fed other forms of milk mixtures I have found that the infants on the orange juice milk mixture required fewer adjustments of the formula, have an average greater gain in weight per month and are less troubled with intestinal upsets. The curd is very fine and the stools closely approximate those of a breast fed baby. At certain periods of the year when the oranges are more sour it may be necessary to diminish the proportion of orange juice to avoid excessive flatulence and occasional loose stools.

Raw egg yolk^{2 3} may be added to orange juice milk after the first few weeks of life, starting

with one-tenth to one-eighth of a yolk and gradually increasing the amount so that a whole egg yolk is given at the end of the second month.

It is hoped that the above suggestions may be adopted by others and thereby add to their armamentarium another satisfactory formula for infant feeding.

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3. Hess, J. H.; Orange Juice and Egg Yolk Mixtures for Infant Feeding. *Am. J. Dis. Child.*, June 1927, p. 1015.

DISCUSSION

Dr. Gerald Cline, Bloomington: Dr. Woodward has presented a very interesting paper,—short and to the point. I think infant feeding brings up a point Dr. Davis brought up in his paper as to what our children are going to be in adult life.

I certainly think the story begins away back with infant feeding.

One thing about orange juice milk; it is simple. It is easy to use and it does the work. Lactic acid is harder to get in rural communities, but most everybody can get oranges.

I personally have not been a very big user of lactic acid milk and sour milks which orange juice belongs to. That again has been another wave in pediatrics. I imagine that this wave also is a little bit on the decline, that we are getting back again to a certain extent to just our ordinary whole milk mixtures, either diluted, or whole milk and our sugars.

Orange juice brings up another important factor, that of adding vitamin C to the milk, and we should see that we do not forget to give our babies this vitamin.

Dr. R. E. Cummings, Chicago: I would like to ask Dr. Woodward what success he has had over a long period of time with the administration of egg yolk in his formulas? I think it is to be highly recommended but in its use I have met with some difficulty. After having been on the egg yolk mixture for some time, either they lose their appetite for milk for some time or they break out in a rash usually on the face. This rash very soon clears up when the egg yolk is removed from the formula.

Dr. Orville Barbour, Peoria: As Dr. Cline has said, sweet milk is satisfactory in most cases, but it seems to me that with a certain percentage of babies, where concentrated feedings are required, acid milks certainly have their place.

I wonder if Dr. Woodward has used orange juice added to condensed milk, such as is being used by some pediatricians. I find a certain percentage of babies cannot handle acid milk of any kind. I have not tried the orange juice milk.

Dr. Lee Frech, Decatur: I want to congratulate the doctor on his paper. The use of orange juice to

my mind is a much better method, especially in very young babies, than the use of lactic acid. Of course the results there are supposed to be the same.

We have used a good deal of orange juice and a good deal of lemon juice, and quite a little lactic acid in our milk modifications.

We find the objection to lactic acid is within the first few days after beginning—you get more or less irritation of the kidney tubules, as will be shown by resulting examination of the urine. That does not occur in our experience with either orange juice or lemon juice. So far as the two are concerned, I cannot see any difference whether you use orange or lemon juice. To my way of thinking one is as good as the other. Lemon juice will have to be used, of course, in a smaller proportion than the orange juice. We usually use one teaspoon, one drachm to the 16 oz. mixture of milk; whereas, larger percentages of orange juice may be used than that.

This idea of using egg yolk is an excellent one. We have used it for a good long time and as Dr. Cummings brought out, you are apt to get some rash or irritation of the skin with egg yolk if you are using a high percentage of fat in your formulas. I can say that in our practice we overcome that by the reduction of our cream percentage in our formula when we add the egg yolk. In that way we get away from that proposition of the rash.

I think the method of using orange juice is a good one.

Another thing I want to mention is that orange juice sometimes, in some babies, is used to better advantage with dry milk than with fresh milk.

I don't know whether Dr. Woodward has had that experience or not, but with some of the dry milk it does go better at times than with fresh. Of course that depends upon the powers of resistance of the individual infant.

It can be used very nicely with evaporated milk also as we have tried that and used quite a little of it. But never use it with condensed milk under any consideration. The fact of the matter is, we never use condensed milk for infant feeding on account of the high percentage of sugar. I want to specifically condemn the use of condensed milk. That is, the so-called, sweetened, canned milk for the use of infant feeding.

Dr. King G. Woodward, Rockford: In regard to Dr. Cummings' question, I have had exactly the same experience with egg yolk as he has. I don't use it nearly as much now as I did two and a half or three years ago, because of the rash which frequently develops. Very frequently you get vomiting and I have also noted there is more constipation.

I have also had the experience of a youngster refusing the orange juice milk because of its sweetness. To remedy that I have decreased the percentage of orange juice and increased the percentage of water for a period of a week or ten days and have usually been able to put the infant back on the orange juice milk.

I think the percentage was about eight or ten cases, out of the 200 that I reviewed at random, that I re-

moved from orange juice milk after a period of two weeks' trial, when orange juice was removed temporarily because the infants did not take sufficient food when sweetened to make a satisfactory gain in weight.

I have never added orange juice milk to condensed milk.

As to Dr. Barbour's question about acid milk being the cause of vomiting, it has been my experience that in the youngsters that cannot handle an acid milk, or orange juice milk, specifically, the cause of vomiting is not due to their inability to handle orange juice milk, as much as it is from some other source. Perhaps a pylorospasm or a pyloric stenosis.

Dr. Frech brought out the subject of lemon juice, which I have used very sparingly. I know Dr. Alfred Hess recommends that in preference to orange juice.

I was glad to hear him bring out the fact that the addition of the orange juice or lemon juice to a dry milk is used satisfactorily.

INTRA-URETHRAL CHANCER, A CASE

PAUL Z. KOESUN, M. D.

CHICAGO

Judging from the small number of cases reported in literature, chancre of the urethra seems to be of extremely rare occurrence. For that reason the following case seems of sufficient interest to report:

Report of Case

T. T., a Chinese man, aged 39, came to see me for the first time on October 10, 1929, in my private office, because of a sore on the inside of the urethra near the external opening which had been present for over a month. He also complained of slight burning at the head of the penis during urination. The infection began ten days following sexual exposure.

Upon the initial appearance of the sore the patient visited another doctor who prescribed and applied various local antiseptics but without obtaining any results.

He had been treated for gonorrhea several times, but never for syphilis.

Examination revealed a small oval ulcer situated on the right lateral wall of the fossa navicularis. It measured 4mm x 5mm in diameters, deeply indurated, hard, and not painful. The edges were smooth, regular, and had very little secretion on its surface. No discharge could be expressed from the urethra. The first portion of urine was slightly flaky, the second portion was

clear. There were no inguinal adenitis, edema of the prepuce, nor other ulcerations present.

No attempt was made to look for the presence of *spirochaeta pallida*.

A tentative diagnosis of primary chancre was made and anti-syphilitic treatment was begun at once.

0.3 gm of neoarsphenamine was given intravenously with no reaction.

The patient was told to return on October 14, which he did. To satisfy my curiosity I took a blood Wassermann.

Dr. M. Molay of the Molay Medical Laboratory reported that the Compliment Fixation Test reacted to the patient's blood positive four (xxxx) plus, and the Kahn Precipitation Test likewise reacted positive four (xxxx) plus.

Another injection of neoarsphenamine, 0.45 gm, was given on October 18, and a third injection of 0.6 gm on October 27, and a fourth injection of 0.6 gm on November 5, and a fifth injection of 0.6 gm on November 15.

The chancre had healed and disappeared by this time.

The patient is still continuing the antisyphilitic treatment.

211 West 22nd Place.

TREATMENT OF PLACENTA PRAEVIA

In the January number of *Surgery, Gynecology and Obstetrics*, J. P. Greenhill, M. D., F. A. C. S., says:

I should like to urge that all patients who have a painless, causeless hemorrhage in the last trimester of pregnancy be immediately sent to a hospital without having a vaginal examination made and without a vaginal pack unless this is absolutely necessary. Because of paved roads, smooth-running automobiles, and the large number of accessible hospitals, there is seldom need to treat a patient with placenta praevia in her home or to pack the vagina before sending her to a hospital. I believe the best treatment for cases of central or partial placenta praevia is the low cervical cesarean section under local anesthesia. Blood transfusion should be thought of and used more frequently than it is today. In infected cases the uterus should be amputated after the baby is removed. For cases of marginal placenta praevia and for a certain proportion of cases of partial placenta praevia, the older methods such as rupture of the membranes, with or without vaginal tamponade, Braxton Hicks version, and metrecrurysis should be employed. As De Lee points out, in former years when confronted with a case of placenta praevia, we first thought of the old methods of treatment and only lastly of cesarean section. Now the

process is reversed, for we usually think of cesarean section first.

RAGWEED DERMATITIS: WITH SENSITIZATION AND DESENSITIZATION PHENOMENA

Marion B. Sulzberger and Fred Wise, New York (*Journal A. M. A.* Jan. 11, 1930), report a case of ragweed dermatitis in a man who gave completely negative reactions to all tests by the scratch method and did not show the slightest urticarial reaction to any of the substances employed, while he was strongly positive to ragweed when applied by simple contact. After a number of injections of allergen by the intradermal route, the patient's skin no longer gave a positive reaction to contact with ragweed allergen, and the dermatitis had improved.

A NEW ONE

Mule—What are you?

Ford—I'm an automobile.

Mule—Gwan! If you are an automobile I'm a horse.
—Times of Cuba.

Society Proceedings

ADAMS COUNTY

The monthly meeting of the society was held on Monday, February 10, 1930. The meeting was called to order at 8:20 p. m. by the president with 34 in attendance.

The program was a symposium on obstetrics conducted by the members. The following read papers.

The Normal Obstetrical Case, A. Germann, M. D.

The Toxemias of Pregnancy, C. A. Wells, M. D.

The Dystocias of Labor, M. E. Bitter, M. D.

Placenta Previa, Ralph McReynolds, M. D.

The Value of X-Ray Pelvimetry in Obstetrics (lantern slides), Harold Swanberg, M. D.

Discussion of this symposium was led by Doctor William Rankin of Keokuk and followed by Doctors Jurgens, Harris, Beirne, Stevenson, Knox, Nickerson, A. H. Bitter and finally closed by the essayists of the evening.

A motion made by Doctor Nickerson that a rising vote of thanks be given Doctor Rankin for coming to Quincy to lead the discussion on the symposium, was carried.

The secretary stated the plans of the program committee who recommended that an all-day meeting be held this fall and that we endeavor to secure a group from Cleveland, headed by Doctor George Crile to conduct the meeting. The plans of the committee were approved.

Doctor Harris called the attention of the society to the editorial in this week's *J. A. M. A.*, relative to the narcotic situation. Doctor Wells made a motion that the secretary be instructed to communicate with our United States Senators and Congressmen-at-Large and

voice a protest against the Porter Bills. Motion was carried.

The meeting adjourned about 11:20 p. m.

HAROLD SWANBERG, M. D.,
Secretary.

ALEXANDER COUNTY

The Alexander County Medical Society held its February meeting at the Halliday hotel, Cairo, Friday night the 21st with the following members and visitors present: Dr. P. H. McNemer, Dr. O. M. Dickerson, Dr. James S. Johnson, Dr. H. A. Davis, Dr. R. M. Young, Dr. Homer Chambliss, Dr. R. V. Rife, Dr. O. T. Hudson, Dr. Flint Bondurant, Dr. J. M. McManus, Dr. J. K. Rosson, Dr. R. E. Barrows, Dr. Edward Miller and Dr. James W. Dunn.

Dr. Hudson of Mounds, and Dr. McNemer of Cairo presented interesting cases that were discussed fully by the members. Dr. Bondurant presented a very able paper on the subject, "Some Practical Points in Handling Injuries." In this he discussed exhaustively the subject of fractures, especially of the skull, and offered many valuable suggestions in caring for all kinds of wounds.

A communication from Dr. Andy Hall, of Springfield, Ill., director of health of the state, asked for the privilege of bringing Dr. C. P. Coogle of the United States Public Health services before the society for a discussion of malaria on March 26. The members voted to hold the meeting as suggested and to extend a special invitation to all physicians in the surrounding territory.

JAS. W. DUNN,
Secretary.

COOK COUNTY

Chicago Medical Society Joint Meeting with Chicago Society of Industrial Medicine & Surgery, February 5.

Ununited Fractures; Etiology and Treatment—M. S. Henderson, Mayo Clinic, Rochester, Minnesota. Discussion: C. W. Hopkins, LeRoy P. Kuhn and S. B. MacLeod.

Diabetes—Surgical Aspect, George L. Apfelbach; Medical Aspect, Robert W. Keeton; Discussion, R. W. McNealy.

Regular Meeting, February 12

Cancer—Dr. J. P. Simonds, Department of Pathology, Northwestern University.

Regular Meeting, February 19

Malaria—Diagnosis and Treatment, Dr. C. C. Bass, Dean of Tulane University of Louisiana, New Orleans, Louisiana. Discussion, Eugene S. Traut and Charles A. Elliott.

KANE COUNTY

The Kane County Medical Society meeting was held at Aurora, Leland Hotel, Feb. 12. Fifty-six members present. Dr. E. L. Lee, president, presiding. Dr. F. O. Frederickson spoke a few words regarding H. R. Bill 7884, urging protest against its passage.

The scientific program was presented by Dr. A. J. Larkin, of Northwestern University, who spoke on

"Radium in Everyday Practice," and Dr. C. H. Warfield, Roentgenologist, Cook County Hospital, who talked on "X-Ray as an Aid in Diagnosis." A series of instructive slides was shown. Both papers enthusiastically received.

Marriages

ELDRIDGE A. MCINTYRE, Mendota, Ill., to Miss Catherine D. Barrett of Princeton, Dec. 28, 1929.

RICHARD A. NAGLE to Miss Catherine Elizabeth Clark, both of Chicago, February 15.

Personals

Dr. and Mrs. Isaac F. Harter, Stronghurst, recently celebrated their fiftieth wedding anniversary.

Dr. George S. Edmonson, Clinton, was recently appointed superintendent of the Kankakee State Hospital, Kankakee.

Dr. Victor H. De Somoskeoy, La Plata, Md., has assumed his duties as public health officer of Jacksonville, it is reported.

Dr. Ralph A. Kinsella addressed the St. Clair County Medical Society, East St. Louis, February 6, on "Recent Studies of Rheumatism."

Dr. Major Worthington, Geneva, has assumed his duties as managing officer of the Research and Educational Hospital, Chicago, succeeding Louis F. Wilk.

The Will-Grundy County Medical Society was addressed, January 29, Joliet, by Dr. G. Henry Mundt, Chicago, on "Social Aspects of the Practice of Medicine"; February 5, by Dr. H. Bascom Thomas, on "Work for Crippled Children"; February 12, by Dr. W. F. Peterson of Chicago, on "Protein Therapy" and on February 19, by Dr. R. W. McNealy on "Fractures of the Pelvis and Complications."

The Chicago Laryngological Society was addressed, February 3, by Josef Fischer, Vienna, Austria, on "Pathogenesis of Cholesteatoma," illustrated.

Dr. Abraham F. Lash, Chicago, addressed the Rock Island County Medical Society, Moline, February 11, on "The Treatment of Puerperal Infections."

Dr. Louis J. Smith, Chester, has been appointed physician at the Southern Illinois Penitentiary to succeed Dr. George Hoffman, who re-

signed after having held the position for ten years.

Dr. Stephen d'Irsay, Johns Hopkins University School of Medicine, Baltimore, lectured at the University of Chicago, February 3, on "Research Facilities in the Eighteenth Century."

Dr. Daniel T. Quigley, Omaha, addressed the Chicago Roentgen Society, February 13, on "How Shall Modern Science Orient Cancer?"

The Whiteside County Medical Society, Sterling, was addressed, February 20, by Drs. G. Henry Mundt and Frank M. Phifer on "Otitis Media" and "Complications of Gonorrhea in the Male," respectively.

Dr. George Dick has resigned as chief of the department of medicine at the Evanston Hospital and will be succeeded by Dr. James G. Carr, Jr., professor of medicine at Northwestern University.

The sixth Lewis Linn McArthur Lecture of the Billings Foundation given before the Institute of Medicine of Chicago, February 28, at the City Club, by Dr. Alexis Carrel of the Rockefeller Institute for Medical Research, New York, on "The Process of Wound Healing."

Dr. George Gellhorn, professor of obstetrics and gynecology, St. Louis University School of Medicine, will give the annual Bacon lectures in the library of the University of Illinois College of Medicine. The first lecture will be given, March 6, on "The Use of Local Anesthesia in Gynecology"; the second, March 7, on "Syphilis of the Uterus."

Dr. Louis N. Katz, assistant professor of physiology, Western Reserve University School of Medicine, has been appointed physiologist and director of cardiovascular research at Michael Reese Hospital. The cardiovascular group of the clinical staff will concern itself at first mainly with problems having to do with angina pectoris and coronary artery disease, but other studies will also be made. Dr. Katz will assume his new duties about April 1.

NEWS NOTES

—The Chicago Society of Industrial Medicine and Surgery was addressed by Dr. Melvin S. Henderson, Mayo Clinic, Rochester, Minn., February 5, on "Ununited Fractures: Etiology and Treatment"; Drs. George L. Apfelbach Robert

W. Keeton and Raymond W. McNealy discussed diabetes.

—A joint meeting of the Institute of Medicine and the Society of Medical History of Chicago will be addressed, March 28, by Dr. Francis R. Packard, Philadelphia, on "William and John Hunter, a Study in Contrasts," illustrated.

—Clarence W. Muehlberger, Ph. D., has been appointed professor of toxicology and pharmacology at Northwestern University and assistant director of Chicago's new scientific laboratory for the detection of crime affiliated with Northwestern University. He has recently been the state toxicologist of Wisconsin and professor of toxicology in the state university at Madison.

—The Chicago Gynecological Society addressed at the Murphy Memorial Hospital, February 21, by Drs. William C. Danforth and Robert M. Grier on "An Analysis of One Hundred and Twenty Low Cervical Cesarean Sections," and Dr. Frederick H. Falls, "Observations on the Use of Local Anesthesia in Gynecologic Operations."

—The Chicago Pathological Society was addressed, February 10, among others by Dr. William Bloom on "Structure of the Lung and Its Implication in Inflammation"; Paul H. Harmon, "Pathologic and Symptomatic Observations on Animals Inoculated with the Virus of Poliomyelitis," and Dr. R. H. Jaffe, "Tubercle-Like Structures in Human Goiters."

—The greatest prevalence of tularemia recorded for any one year in Illinois was in 1929, when, up to December 10, seventeen cases had been reported. All but three of the cases occurred in the southern section of the state; in most instances, rabbits were given as the source of infection.

—The University of Chicago announced, January 21, that tuition in all departments of the graduate schools of arts, literature and science will be raised from \$30 to \$100, and in the law and medical schools from \$100 to \$125 beginning with the summer quarter. The change is said to be for the purpose of providing means to increase the salaries of professors and instructors.

—Dr. Charles A. Elliott, Chicago, was the guest of honor at a dinner given by the Vermilion County Medical Society at the Hotel Wolford, Danville, February 4. A scientific pro-

gram followed the dinner, at which Dr. Elliott gave an address on "Observations Concerning the Treatment of Diseases of the Liver." While the physicians were holding their meeting the Woman's Auxiliary to the Vermillion County Medical Society, with representatives from various local women's organizations, had a dinner, following which an illustrated talk, "Pink Pills for Pale People," was given by Dr. Arthur J. Cramp, director, Bureau of Investigation, American Medical Association.

—Following a trial of several weeks, at which about 1,800 pages of testimony and innumerable exhibits were presented, the medical committee of the state department of education and registration, January 23, found Henry Junius Schireson guilty of charges which the attorney general had made against him. In substance these charges were fraud, character unbecoming a physician, and gross malpractice. The present trial was the result of Schireson's responsibility in the case of Miss Sadye Holland, who suffered a double amputation following an operation for bow legs. The members of the medical committee, before whom Schireson was tried, were Drs. M. L. Harris, chairman, John R. Neal, Arthur H. Geiger, W. H. Gilmore and Gilbert Fitz Patrick, who unanimously recommended that Schireson's license be revoked.

Deaths

JESSE FRANKLIN BEABOUT, Casey, Ill.; University of Illinois College of Medicine, Chicago, 1928; aged 27; died suddenly, January 25, of heart disease.

JAMES O. BULLOCK, Princeville, Ill., New York University Medical College, 1872, a practitioner in Lonaconing, Maryland, for 40 years, and resident of Princeville since 1920; aged 87; died at the home of his son, January 18.

FRED W. CARMAN, Geneseo, Ill.; Chicago Homeopathic Medical College, 1882; for several years member of the board of health; aged 71; died, January 6, at the J. C. Hammond City Hospital, of arteriosclerosis and myocarditis.

MALONE DUGGAN, Danville, Ill.; University of Texas School of Medicine, Galveston, 1894; a former state health officer of Texas and assistant surgeon at the National Soldiers Home hospital; aged 61; died in the hospital at Danville, January 31.

CHARLES W. GODDARD, Harvard, Ill.; Chicago Medical College, 1882; aged 72; died, January 16, of heart disease.

WILLIAM P. GRADY, Chicago; Rush Medical College,

Chicago, 1902; aged 54; died, January 4, of coronary thrombosis and chronic nephritis.

DAVID DECATUR GRIER, Gays, Ill.; Medical College of Ohio, Cincinnati, 1872; aged 80; died, January 29, at the Decatur and Macon County Hospital, Decatur, of cerebral hemorrhage.

LOUIS C. KOIER, Chicago; Chicago Homeopathic Medical College, 1888; aged 65; died, January 4, of uremia and chronic nephritis.

SAUL A. KOPPNAGLE, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1890; aged 70; died, February 7, of acute dilatation of the heart and chronic myocarditis.

CHARLES WILLIAM LENHART, Danville, Ill.; University of Louisville (Ky.) School of Medicine, 1911; connected with the Lake View Hospital, where he died, January 22, of pneumonia, age 57.

CHARLES LIGHT McDONELL, Chicago; Bennett Medical College, Chicago, 1914; aged 39; died suddenly at his home, February 6, of aortic aneurism.

THOMAS NUNAN MILLER, Rockford, Ill.; Northwestern Medical School, 1880; aged 80; died at his home, January 14, of pneumonia.

JOHN N. NELMS, Taylorville, Ill.; Cleveland College of Physicians and Surgeons, 1889; a member of Illinois State Medical Society and former officer of Christian County Medical Society; a practitioner in Taylorville for 40 years; active in locating the hard road system of the state; aged 73; died January 24, in St. John's Hospital, Springfield, following an operation.

FRANK M. NEVILLE, Canton, Ill.; Lincoln (Neb.), Medical College, 1901; aged 62; died, January 15.

ANNY MAREA CAROLINE ERNESTINE PETERSEN-
SAUNDERS, Oak Park, Ill.; State University of Iowa College of Medicine, Iowa City, 1912; formerly associated with the State Psychopathic Institute and the State hospitals at Dunning and Elgin; a member of Illinois State Medical Society; aged 42; died, January 1, at Davenport, Iowa.

EMMETT ANTHONY PRINTY, Chicago; Northwestern University Medical School, 1915; a member of Illinois State Medical Society and Director of the Laboratory of Surgical Technique; aged 37; died, February 1, of a self inflicted bullet wound.

WLFRED D. ROBBINS, Chicago Heights, Ill.; Chicago Medical College, 1884; age 68; died, January 28, of heart disease and nephritis.

CHARLES F. SMITH, Kankakee, Ill.; Miami Medical College, Cincinnati, 1878; a member of Illinois State Medical Society; a graduate in Law and Pharmacy; former member of city council and school board; active in civic and fraternal affairs; aged 79; died January 27.

FREDERICK W. STAHL, Chicago (licensed, Illinois, 1899); aged 69; died, Nov. 13, 1929, of myocarditis.

LOUIS L. TINSMAN, Smithshire, Ill.; Rush Medical College, Chicago, 1886; retired from practice for several years; aged 74; died at his home, January 25.

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Editorials

GUESTS' ENTERTAINMENT PROGRAM AT THE ILLINOIS STATE MEDICAL SOCIETY MEETING IN MAY. MAKE HOTEL RESERVA- TIONS EARLY

The Will County Medical Society is doing everything possible to make the Eightieth Annual Meeting of the society at Joliet, May 20-22, the best in the history of the organization.

We are planning an elaborate entertainment for the ladies. We are confident that all guests will be delighted with the royal entertainment we are arranging for them.

Members wishing to play golf should bring their outfits with them. Joliet is noted for its golf courses and no doubt many will avail themselves of this opportunity.

Members desiring to make hotel reservations should get in touch with Dr. Roy B. Leach, local chairman of the hotels and information committee, at 204 Scott Street, Joliet, Illinois.

B. G. Wilcox, M. D.,
General Chairman, Joliet, Illinois.

WHAT WE HAVE PLANNED FOR YOU IN JOLIET MEETING OF THE STATE MEDICAL SOCIETY

"There is gold in them thar hills." is an old phrase coined during the great Gold Rush, but it is apropos to use it now in connection with the golf tournament arranged for the visiting physicians during the meeting of the Illinois State Medical Society at Joliet this year. Not that we have rich purses to offer the winners but if you pivot with care and your divots as well as your score are of modest proportions you may be well rewarded for your efforts. The trophies are donated by members of the local Medical Society. This will be a handicap affair. The one who has the lowest net score will receive a beautiful silver loving cup; the next prize will

be a driver; while the third prize will be three dozen old, delapidated golf balls. However, the last prize is merely tentative, for obvious reasons the committee decided to take under advisement the generous offer of one of our (Scotch) colleagues, in the hope that he will have a change of heart.

This event will take place on Tuesday, May 20, 1930, at the Joliet Country Club. We have a sporty eighteen hole course that will put your golfing skill to a test. All you have to do is to register and you will be provided with transportation and a ticket which entitles you to play all day if you wish. You may niblick your way with confidence and approach the 19th hole with a feeling that our Clubhouse has well provided for the golfer's comfort. However, it might not be amiss to remind you that:

"There was an old man of St. Ives
Who married and buried three wives;
They were stalwart and stout
But he wore them all out
By his chatter of putts and drives."

Since not all of our colleagues are golf minded the committee has arranged to make available the Riding Academy to lovers of this sport. You may ride to your heart's content over bridle paths winding through seven hundred acres of sylvan paradise in the Pilcher Arboretum, considered the most beautiful natural park in the State. Or, if you prefer you may go to the Y. M. C. A. and enjoy yourself in the swimming pool, gymnasium and hand ball courts.

Speaking of indoor sports, you cannot afford to overlook the stag on Tuesday evening as the committee in charge has amply provided for your entertainment there. See you in Joliet.

BERNARD KLEIN, M. D.,

Chairman of Entertainment Committee.

INFORMING THE DOCTORS AND EDUCATING THE CANDIDATES BEFORE THE PRIMARIES

The following letters were sent out by our legislative committee to Illinois doctors and legislative candidates before the primaries April 8:

Dear Doctor: Enclosed please find a copy of a letter going to all candidates of record for the next General Assembly.

The council of the Society, through its Legis-

lative Committee, sends out at frequent intervals during a legislative session a bulletin which is mailed gratis to all interested members. This keeps over a thousand physicians in the state in touch with such laws that have either a remote or a direct bearing on the practice of medicine.

It is most important for you to know the character and type of men of your district who are seeking the endorsement of the voters to represent them in the next Illinois State Legislature. It is indeed fitting and proper that the medical profession shall take a very active part, not only in the proposed bills introduced in the Legislature regarding the public health, but also in the type and capabilities of those who seek the very important duty of enacting such laws.

It is well to scan the list of candidates in your district. The chairman of the Legislative Committee, at Springfield, can furnish the records regarding the members seeking reelection as to their attitudes in previous sessions regarding health measures.

If the interest of physicians is not aroused in this day of political changes regulatory laws inimical to the medical profession are sure to appear. The officers of the Illinois State Medical Society, through the very able efforts of the editor of THE ILLINOIS MEDICAL JOURNAL, have fought valiantly for years to place Illinois in a most enviable position as to the status of medical matters. Illinois is one of the very few states which have a Medical Practice Act by which all who seek to treat human ailment are measured. This law is administered by a committee of five regular physicians. All members of the Illinois State Medical Society. There are no "drugless healer boards" or "special privilege" conflicting laws. Illinois was one of the few states which refused to co-operate with the Sheppard-Towner federal law, and this refusal was pivotal in the defeating of that law. Only the unified efforts of the physicians of Illinois will prevent the concurrence with a similar federal law if another is enacted in Washington. Again, Illinois is putting forth a strong protest against the proposed Federal Narcotic Commissioner. Only through the untiring efforts of the officers of your Society can such measures fail to gain endorsement.

It is imperative, therefore, that you take an individual interest in the primaries and the election which will decide the personnel of the

next General Assembly. Such interest on your part will evidence the endorsement of your officers and their legislative program.

Yours very truly,

J. R. Neal, M. D.,

Chairman Legislative Committee.

To the Candidate addressed:

As a candidate for the Illinois General Assembly you will be interviewed by many specialized groups interested in legislation to be opposed or favored.

At each session of the legislature many bills are offered which relate to the public health.

The Illinois State Medical Society is composed of thousands of physicians throughout the state, and through its officers makes an effort each session to inform the legislators as to the merits or necessity of any bill which is of general interest to the people of Illinois regarding their personal and community health.

The Illinois State Medical Society does not resort to sending large lobbies to Springfield to favor or to oppose any given measure. Neither does that society resort to the so-called "grateful patient endorsement," for the society is opposed to having thousands of letters from such sources sent in to Springfield to encumber the arduous duties of the legislator. The 1931 session of the Illinois Legislature will have many controversial subjects to deal with. A number of groups are extremely active at this time trying to gain favors or pre-election promises.

The Anti-Vivisectionists, an organization ably financed and largely sponsored by a group of excellent ladies, are attempting through false propaganda to tear down the very foundation upon which scientific medicine has been built. They will attempt to put the love for a dog far in advance of the life of a child, or scientific care for animals themselves. Animal experimentation, as conducted by reputable colleges and laboratories, is not inhuman and there is no bestial brutality as the proponents for such a bill would have you believe.

The purpose of this letter is merely to ask that you keep your mind open and do not make promises without thoroughly investigating the good or evil of a measure. We would suggest that you do not promise your support to Medical Men, Anti-Vivisectionists, Chiropractors, Osteopaths,

Naprapaths, Santologists, or any one of many groups who seek special privilege legislation.

There is an increasing effort upon the part of a number of well organized groups who, desiring lucrative positions and increased political power, have abandoned efforts to gain certain legislative measures in the forty-eight states, and have decided to concentrate their efforts at Washington and so obtain a national law; and then to crowd that national law down the throats of the state legislators for concurrence, thus robbing the individual state of its own sovereign rights. This class of legislation has always been opposed and always will be opposed by the Illinois State Medical Society.

The famous Sheppard-Towner Infant and Maternity Act was of this type, being passed by Congress and carried on for a period of five years, expiring in 1929. The government matched each state's appropriation with an equal amount of money to carry on the propaganda, and it is needless to say that a large portion of the money of the government is obtained from taxes originating in the forty-eight states. Carefully compiled statistics fail to show anything like a convincing argument that the five years' effort, and the several million dollars expended, had any effect whatsoever upon the mortality of mothers and children. Illinois, through its legislature, refused to participate in that law. The mortality statistics in Illinois compare favorably with those of the other states in the Union, and are even better than many of the states which accepted the federal subsidy.

An earnest effort is now being made in Congress to perpetuate a measure similar to the Sheppard-Towner Act. The Illinois State Medical Society is radically opposed to such a measure.

Other federal bureaus and commissions are being considered in Washington which would supersede state laws having a bearing on the same problem. All such commissions and bureaus which would have supervisory power over the practice of medicine are in our opinion wrong, as such regulatory laws should be enacted by the state of Illinois without federal aid or hindrance.

The Illinois State Medical Society will appreciate the opportunity to cooperate with the legislature in an effort to keep Illinois as one of the outstanding states of the Union where adequate

laws to protect the health of the citizenry of the State are concerned.

Yours very truly,

J. R. NEAL, M. D.,

Chairman Legislative Committee.

NOT PAIN BUT PROGRESS IS THE TARGET AT WHICH THE ANTI-VIVISECTIONISTS AIM. THEY LET WHOLESALE CRIMES AGAINST ANIMALS FLOURISH BUT WITH MAUDLIN SENTIMENTALITY THEY RAISE CAIN OVER VIVISECTION FOR THE SAKE OF MEDICAL PROGRESS

The anti-vivisectionists may emit howls that are long and loud and lusty over vivisection for the sake of medical progress, but it is to be noted that they are singularly quiet when it comes to vivisection for social convenience.

In fact the name of more than one strong anti-vivisectionist might be found among the committees and boards advocating sterilization of many classes of humans. Neither do they seem at all perturbed about the great number of castrations among domestic animals which might be placed conservatively at 100,000,000 cases. Anesthetics are not used in these cases, not even for the poor little bitches. But who hears protest from the anti-vivs on that? And where, oh, where is the S. P. C. A. on that topic? Nearly all of the operators in the bulk of these 100,000,000 cases know little of anatomy and far less of sepsis and even less of technic. Even under the best of circumstances this operation is of the classification denoted as "major" and there is plenty of attendant suffering and suffering that is quite unnecessary. It has been well said that not pain but progress is the target at which the anti-vivisectionists aim. Nor do they seem to be concerned about the frightful suffering and many preventable deaths among domestic animals caused by filth, cold, exposure, etc., in shipment and slaughtering of animals and the suffering and deaths caused dealers, fishermen, game and bird shooters and dealers.

The antivivisectionists let the wholesale crimes against animals flourish. But with maudlin sentimentality they raise cain over the compara-

tively small proportion of animal experiments conducted by scientists that result in benefits to animals as well as to the human race.

DR. TUITE—IN MEMORIAM

WHEREAS;—In the furtherance of His All-Wise Plan, our Divine Ruler of the Universe has raised our friend and colleague, John E. Tuite, a Past-President of the Illinois State Medical Society, to the higher service of His own purpose, and

WHEREAS;—Though we bow in reverence to the will of our Creator, we are deeply conscious of loss which Earth cannot regain, therefore,

Be It Resolved; That the minutes of the Council of the Illinois State Medical Society contain this record, our memorial tribute to a highly esteemed co-worker, Dr. John E. Tuite, who was called from his Earthly toil, on February 26th, 1930. We record the passing of a friend of many years standing, one who only recently, held the highest position of trust in our Society, and who filled it well, paying attention only to the interests of those he served, to the detriment of his own ailments. Efficient service, loyalty to fellow man, and faith, marked his efforts in his position of trust.

Be It Further Resolved;—That a copy of this appreciation of our loss be sent, in a spirit of mutual bereavement, to the family of Dr. John E. Tuite, and that it appear in the columns of the ILLINOIS MEDICAL JOURNAL.

E. H. WELD,

CLEAVES BENNETT,

HAROLD M. CAMP,

Committee.

WOMAN'S AUXILIARY

ILLINOIS STATE MEDICAL SOCIETY

Coles-Cumberland County

"On March 7 the doctors of Coles-Cumberland County Medical Society met with the Woman's Auxiliary and had Dr. John R. Neal of Springfield as speaker.

"Following the luncheon Mrs. T. O. Freeman, president of the Coles-Cumberland Auxiliary, conducted a most interesting and instructive program on topics of the day pertaining to the welfare of medicine.

"Mrs. J. R. Neal, president of the state Aux-

iliary, spoke on the progress of the Auxiliary as a national organization."

Sangamon County

"A woman's auxiliary of the Sangamon County Medical Society was organized at a tea, at which Mrs. J. R. Neal, Jr., president of the Woman's Auxiliary of the Illinois State Medical Society, entertained yesterday afternoon at Hotel Abraham Lincoln.

"Officers elected were: President, Mrs. Herbert Henkel; Vice-president, Mrs. M. G. Owen; Secretary, Mrs. Harry Otten, and Treasurer, Mrs. Robert Flentje.

"Mrs. R. P. Cowdin, counselor for the state auxiliary, and Mrs. Neal, outlined the objects of the organization.

"The next meeting will be held one month from yesterday."

Vermilion County

"Voltaire said the charlatan was born on the day that the first fool met the first knave. But the history of quackery proves that the quacks can fatten upon wise men as well as upon fools. It is not a lack of brains that breeds credulity but a dearth of knowledge. Mr. Barnum was credited with saying that the public likes to be humbugged. It does not. But it is humbugged to the extent that it lacks knowledge, and in the realm of therapeutics the public's lack of knowledge is great."

"This was the opening statement in a lecture, 'Pink Pills for Pale People,' given by Arthur J. Cramp, M. D., director of the Bureau of Investigation of the American Medical Association, at an open meeting given by the Woman's Auxiliary to the Vermilion County Medical Society held Tuesday night at the Y. W. C. A.

"This was the first gathering of this nature ever given by this association, organized two years ago. The program was opened with a dinner at 6:30 for which there were 125 plates. Guests were seated at tables grouped to seat 10 or more. Each table represented some club or civic body of the city or county.

"The speaker's table was decorated with a large bowl of red roses and candles in the same color and the smaller tables had for a centerpiece a cluster of American flags. Red tapers lighted the tables.

"Mrs. Solomon Jones, auxiliary president, opened the meeting. She called upon the groups

seated at the various tables to rise as she called the name of their organization. The bodies represented were as follows: Danville Woman's Club and Federation of Woman's Club, Lake View Auxiliary, Y. W. C. A., St. Elizabeth Hospital, Altrusa Club, Business and Professional Women's Club, Salvation Army, the Municipal Dispensary, Red Cross and Associated Charities, Travelers' Aid, City School Nurses, Lake View Staff of Nurses, Musical Cycle, Vermilion County Bureau, Child Welfare.

"Mrs. Solomon Jones, representing the Woman's Auxiliary to the Vermilion County Medical Society, introduced Dr. Camp, a national authority and an interesting and entertaining speaker."

ILLINOIS CONGRESS OF PARENTS AND TEACHERS SPONSORS "SUMMER ROUND-UP" OF PRE-SCHOOL CHILDREN

One of the most important projects of the Illinois Congress of Parents and Teachers is the Summer Round-Up. The purpose of this movement is to attempt to correct all remediable physical defects in children of pre-school age, so that they may enter upon the school period free from physical handicaps.

This project is of great concern to the medical profession of Illinois. The Illinois Congress of Parents and Teachers has emphasized the importance of local Associations conducting the Summer Round-Up in cooperation with the local medical societies and has suggested that the examinations be given by the family physician, with the approval of the County medical society, in the privacy of his own offices.

Mrs. C. W. Balch of Chicago, State Chairman of the Summer Round-Up, has sent the following letter to local Parent Teacher Associations:

"Dear President:

"The entire responsibility for the health of the pre-school child rests upon his parents. The home can make no greater contribution to the school than a scholar mentally and physically prepared to take advantage of what the school has to offer. In this belief the Illinois Congress of Parents and Teachers is recommending the 'Summer Round-Up of the Children', to send to school in the entering grade a class of children 100 per cent free from remediable defects. Regis-

tration blanks and promotional literature will be mailed you soon."

This Is the Way You Go About It

1. Consult school authorities to gain consent and cooperation.

2. Give advance publicity through the local newspapers, and present the plan at your regular meeting of the parent-teacher association.

3. Register with state chairman, name and address below.

4. Make a canvass to locate the children to be examined, using (a) house to house canvass; (b) kindergarten rolls; (c) cradle rolls; (d) names turned in by the school children.

5. Hold a "Round-Up" of the mothers of children to be examined, having talks made by a physician, a nurse and the campaign director, giving the mothers an opportunity to ask questions.

6. Determine method of examination, whether it is to be in the family physician's office or in a clinic at the school.

A. If examinations are to be in physicians' offices the local committee should:

Make arrangements with physicians for hours, and provide nursing and clerical assistance, if necessary.

b. Make whatever arrangements are necessary with the mother for having the child there at time specified.

B. If examinations are to be in a clinic at school or elsewhere, the committee should:

a. Secure assistance of physician, dentist, nurse, and parent-teacher members and mothers of the children.

b. Provide equipment after consulting with the physician in charge:

Tables	Tongue depressors
Wash basins	Towels
Paper napkins	Antiseptic solution
Medicated cotton	Tapeline
Pen and ink	Paper towels
Scales	Applicators
Water	Chairs

Important Note—Whichever method of examination is followed, office or clinic, in order to be a part of the great Congress Summer Round-Up movement, the *National Congress*

Examination Blanks, furnished free upon registration, must be used.

Method of Conducting Examination

1. Arrange for physical examination, in room provided, with a parent-teacher member in charge, where the children can be undressed to the waist and a towel put around the child.

2. Physician and dentist examine child; nurse or parent-teacher member registers, weighs and measures the child, and fills in the National Record Blank supplied free of charge to Illinois Congress associations who have enrolled for Summer Round-Up.

3. Follow up the examination by visiting the parents of registered children in a friendly way to make sure that remedial work is being done.

The examination blanks which will be used for the Summer Round-Up are furnished by the American Medical Association.

The following letter has been sent out from the Educational Committee to the Presidents and Secretaries of County Medical Societies. Any questions concerning the procedure of the Summer Round-Up should be referred to the Committee at 185 North Wabash Avenue, Chicago.

March 21, 1930

Dear Doctor:

Our Educational Committee wishes to keep County Medical Societies informed of activities sponsored by lay groups with whom we are in direct contact. As you know, one of the major projects of the Illinois Congress of Parents and Teachers is the Summer Round-Up of Pre-School Children. The purpose of this movement is to attempt to correct remediable physical defects in children of pre-school age, so that they may enter upon the school period free from unnecessary physical handicaps.

This Parent Teacher Association movement is of great concern to the medical profession of Illinois, and the Illinois Congress of Parents and Teachers now realize that their work cannot succeed without the support of physicians.

Those responsible for the general plans of the Summer Round-Up have emphasized the importance of their local associations conducting these campaigns in cooperation with the local medical societies. They suggest that examinations be given by the family physician in his

office or in clinics—THE METHOD RESTS ENTIRELY WITH THE LOCAL COUNTY MEDICAL SOCIETY. Compensation is between patient and physician.

There is need for better cooperation and understanding between the local Parent Teacher Associations and the local medical groups. We therefore, hope that your Society will cooperate with representatives of your Parent Teacher Associations in making plans for satisfactory methods and arrangements for the Summer Round-Up. We recommend that you be cordial but firm in holding your local Associations to the plan of the State Congress, which does recognize a family physician responsibility.

Sincerely yours,

Chairman

Educational Committee,

ILLINOIS STATE MEDICAL SOCIETY

THE UNITED STATES HAS NO NEED OF ADDITIONAL PROHIBITIVE NAR- COTIC DRUG LEGISLATION

THE PROPOSED PORTER NARCOTIC CONTROL
BILLS NOW BEFORE CONGRESS ARE A VIO-
LATION OF THE CONSTITUTION AND
ARBITRARY DICTATION OF UNITED
STATES GOVERNMENT BY FOR-
EIGN NATIONS UNDER
THE CLOAK OF TREATY
MAKING POWERS

In the March issue of the Journal we called attention editorially to a number of serious objections to the Porter Bills. Our comment was largely from the viewpoint showing that there is at present ample statutory enactment to prevent any illegitimate infringement upon the necessary and legitimate dispensation of narcotic drugs. This editorially deals more especially with the legal phases of the proposed legislation.

Proponents of the Porter narcotic bill overlook entirely that the very conditions of their purposed legislation will entitle foreign governments and foreign nations to have even more power in the government of the United States than do legalized citizens of this democracy.

Here is a flagrant betrayal of the Constitution of the United States; of the heroic sacrifices of the men who laid down their lives in the world

war and whose memory should not be so defiled within slightly more than a decade of their passing; and a deliberate contempt of every patriot since the Liberty Bell first rang out its message of independence.

There seems to be no end to what meddlesome matties are willing to do for the sake of a momentary flush of power. If their actions were dictated by a knowledge of existing conditions there might possibly be some degree of excuse for their offence. Ignorance is no excuse under any conditions, nor will it be any excuse for what will follow if this Porter bill goes through.

For, by the very conditions of this bill, and its international affiliations, the statues of the United States in direct defiance of the elements of the Constitution are entering into an alliance with foreign governments through which their treaty-making powers can usurp on occasion the vital elements of state rights and even of federal government in the United States.

It is to be wondered whether if Washington, Jefferson, Henry and Monroe were alive today, if such an idea might not be considered arch-treason? In 1776 the residents of this country had a habit of plain speech. Even the language of diplomacy was not obscure. With the progress of events and the development of science as this country has participated in laying bare the wonders of the invisible world it seems to have spread the layer of illusion over plain facts right at hand. Else, how could any sane patriot tolerate for an instant such an iniquitous piece of legislation as the Porter Bill?

The Harrison Narcotic Act is controlling drug addiction as well as it can be controlled, but the Harrison Narcotic Act is not wiping crime off the face of the earth, and until crime is abolished there will be no cessation of that drug traffic now controlling the underworld—a strata of society that find its present degree of organization practically superior to those of law and order. It would not appear that the Porter Bill would be a panacea for the existent and terrifying powers of crime. These are nourished and abetted by the Volstead Act, an amendment to the constitution that even when financed by a terrific tax upon the citizenry, the government finds itself powerless to enforce.

In the face of all this, with the proposed Porter act the innocent but not altogether igno-

rant bystander finds himself asking a few pertinent questions.

The International Convention for the Suppression of the Use of Opium and Other Drugs was signed at the Hague, Jan. 23, 1912. To this the United States was a party. Powers contracting—and this included the United States—bound themselves to make laws to confine opium and coca leaves and their salts, derivatives and compounds, to medicinal and other legitimate uses, *unless such laws were already in force*. The Porter Supplemental Narcotic Control Bill is out explaining and justifying itself that this legislation means no harm at all to the rights of American citizens; nor any treason to the Constitution of the United States. Only that it is out to make the United States keep its word to the convention. Isn't that nice of the Porter Bill, gentlemen. However, look under the edge of things and what do you see?

Having got this neat little declaration off its chest, the Porter Bill tacks back and resumes, the leitmotif of its lay.

For the Porter Bill declares that it intends to "prohibit every one from using narcotic drugs professionally and from dealing in them commercially unless a federal bureau chief has authorized him to do so. Except that the bureau chief cannot lawfully license narcotic addicts or persons convicted of violating narcotic laws, he may determine by regulations whom he will and whom he will not license, and under what conditions. If this bill is enacted and if it is constitutional, every state law in conflict with it will automatically become void to the extent of the conflict. Medical practice acts, pharmacy acts and poison acts of the states, so far as they relate to narcotic drugs, will give way to the federal mandate."

The Porter Bill, as can be readily seen is out to set a new fashion in democracy—God save the mark—in international politics and confidence games.

"Heretofore it has seldom been assumed that the federal government, by entering into a treaty with a foreign power to enact legislation supposedly of mutual benefit, can acquire authority to make laws in derogation of rights belonging to the states and to the people under the federal constitution."

Of course the gentle shepherds of the Porter

Bill are quick to cry in unison that such abuses of treaty-making power are going to be very infrequent. A few bystanders may stop and ponder on the "life-for-a-pint" legislation contrasted with some reported drunken orgies in high places, very high and very close to the statute books that have shocked more than one community. It is always a terrible thing when mere man commences to think he is infallible. It is not a question of "infrequent abuse of treaty-making power." It is a question of "*NO abuse, and NO EXERCISE AT ALL of treaty-making power where the government of the United States is concerned.*"

INTERNATIONAL ENCROACHMENT ON THE RIGHTS OF AMERICAN CITIZENS SHOULD BE STOPPED BEFORE IT IS BEGUN. The primary purpose of the Porter Bill seems to be to drug the American nation into an acceptance of high treason done up in an altruistic wrapper. Well has it been written that

"The proponents of the pending Porter Narcotic Control Bill would seem to excuse it by urging that such abuses of the treaty-making power are not likely to be frequent. But such an abuse should not occur at all. The time to prevent unconstitutional federal encroachment on the right of the states and of the people is when such encroachment first threatens, not after it has been established. The present problem concerns not only physicians, dentists, veterinarians, pharmacists and the sick and injured in need of narcotics, but every one who believes in maintaining the freedom of the people and of the states from unwarranted federal interference. Under our present system of government by the individual states as well as by the federal government, we have grown to our present position among the nations of the world. Let those who would jeopardize our freedom of thought and of action consider more carefully the past and the future. There are principles more important than the furthering of pet legislation."

It is indeed a matter of gratification that protests have been filed by the Board of Trustees of the A. M. A. against the enactment of these Porter Narcotic Bills—(H. R. 9053, A Bill to create in the Treasury Department, a Bureau of Narcotics, and for other purposes; H. R. 9054, A Bill to further carry into effect the interna-

tional convention for the suppression of the abuse of opium and other drugs signed at The Hague on January 23, 1912, and for other purposes). The protest has pointed out (1) that existing federal narcotic laws already provide adequate machinery for their enforcement by the Bureau of Prohibition; (2) that there is no evidence to show that, if the present enforcement machinery fails to function effectively, it does so because of any inadequacy in the laws now in force, or that any supposed inadequacy will be remedied by this bill; (3) that discretion with respect to the quantity of opium that may be imported annually is more safely vested as at present in the Federal Narcotics Control Board than it would be in a single commissioner, and (4) that the increase in the enforcement personnel proposed by this bill for the projected bureau of narcotics, if provided for the Bureau of Prohibition, which is now charged with the enforcement of the federal narcotic laws, will accomplish all that a similar increase could accomplish in the proposed bureau of narcotics and will do so without disrupting administrative procedure and destroying precedent, as must be done if the proposed bureau should be created.

"The protest filed against H. R. 9054 points out that the bill proposes to create another federal licensing system, with the primary purpose of taking from the states their rights to determine who may use narcotic drugs professionally and sell such drugs within those states. The bill, if enacted, would place the supreme control over such matters in one federal officer, the Commissioner of Prohibition. The trustees of the Association believe that the federal government should first ascertain whether the states allow unfit persons to use narcotic drugs professionally or to deal in them commercially, and then to give the states an opportunity to correct such evil conditions if they actually exist. If the federal government has evidence that any state is permitting unfit persons to engage in callings whereby they may control narcotic drugs, the evidence should be submitted to the offending states with a view to action. The trustees consider that the absolute prohibition by this bill of the licensing of persons convicted of violating any state or federal law relating to narcotic drugs is unreasonable, since conviction may be

the result of purely technical offense, such as failure to register under the Harrison Narcotic Act before the last day allowed by law. The proposed bill recognizes absolutely no difference between the gravity of various offenses as far as the issue of licenses is concerned. There are laws now in many states which authorize the revocation of license of physicians who are drug addicts and which provide for the revocation of licenses following violation of the narcotic laws or for the commission of felony.

The trustees oppose the policy of concentrating in one officer in Washington the enormous authority that would be conferred on the Commissioner of Prohibition if H. R. 9054 should be enacted. His authority would be practically unlimited."

The Porter Bills are known as H. R. 9053 and H. R. 9054. H. R. 9053 is before the Ways and Means committee of the House of Representatives. The personnel of this committee is as follows:

Willis C. Hawley, Chairman, Oregon; Allen T. Treadway, Massachusetts; Isaac Bachrach, New Jersey; Lindley H. Hadley, Washington; Charles B. Timberlake, Colorado; Henry W. Watson, Pennsylvania; James C. McLaughlin, Michigan; Charles C. Kearns, Ohio; Carl R. Chindblom, Illinois; Frank Crowther, New York; Richard S. Aldrich, Rhode Island; Harry A. Estep, Pennsylvania; C. William Ramseyer, Iowa; Frederick M. Davenport, New York; James A. Frear, Wisconsin; John N. Garner, Texas; James W. Collier, Mississippi; Charles R. Crisp, Georgia; John F. Carew, New York; Henry T. Rainey, Illinois; Cordell Hull, Tennessee; Robert L. Doughton, North Carolina; Heartsill Ragon, Arkansas; Samuel B. Hill, Washington; Harry C. Canfield, Indiana.

H. R. 9054 is before the committee on Foreign Affairs. The personnel of the committee is as follows:

Stephen G. Porter, Chairman, Pennsylvania; Henry W. Temple, Pennsylvania; Hamilton Fish, Jr., New York; Cyrenus Cole, Iowa; Morton D. Hull, Illinois; Joseph W. Martin, Jr., Massachusetts; Charles A. Eaton, New Jersey; Henry Allen Cooper, Wisconsin; Edward E. Browne, Wisconsin; Melvin J. Maas, Minnesota; Franklin F. Korell, Oregon; W. M. Morgan, Ohio; Joe Crail, California; Edgar C. Ellis, Missouri; J. Charles Linthicum, Maryland; Charles M. Stedman, North Carolina; R. Walton Moore, Virginia; David J. O'Connell, New York; Sam D. McReynolds, Tennessee; Sol Bloom, New York; Luther A. Johnson, Texas; Ruth Bryan Owen, Florida.

Members of the respective committees from Illinois are Carl R. Chindblom, Henry T. Rainey and Morton D. Hull.

Doctors should write members of the committees protesting against the passage of the Porter Bill. Send your communication directly to the members at Washington, D. C., care House of Representatives.

**THE PORTER NARCOTIC CONTROL BILL
IS ABOUT AS DRASTIC BUREAU-
CRATIC CONTROL OF THE PRAC-
TICE OF MEDICINE AS CAN
BE IMAGINED.**

If this bill becomes a law every physician, druggist, dentist and veterinarian in the United States must obtain a license to employ and use narcotics in his profession from the United States Commissioner of Prohibition, and by the regulations empowered in this bill, the commissioner appointed, prescribes the regulations that will govern the issuing, suspension and revocation of licenses.

Hundreds of times in the last decade the editor of the *JOURNAL* has called attention to the dangers of an over-centralized government and the attempt at bureaucratic control of everything and more especially to the dangers of a bureaucratic control of medicine.

The Porter Bill will put into the hands of the Federal Government bureaucratic control of the rights of the various states, a centralization of power unnecessary, uncalled for, and is an attempt of the federal government to control the practice of medicine. The medical profession should not allow this bill to become a law without strong protest. It is a forerunner of more drastic bureaucratic legislation by the bureaucrats who seek to place the control of everything in the hands of an over-centralized government in Washington, D. C.

**TO JUDGE AND CONDEMN THE DOCTOR
FOR WHAT HE FACES AND NOT BY
WHAT HE HAS OVERCOME IS
MANIFESTLY ABSURD AND
UNFAIR**

**PERSUADE THROUGH PROPAGANDA A GULLIBLE
PUBLIC THAT THE EASY ROAD TO THE
PROMISED LAND WHERE THERE SHALL
BE NO MORE SICKNESS, OR SOR-
ROW, OR DOCTOR BILLS, LIES
THROUGH THE SOCIAL-
IZATION OF MEDICINE
AND THE DEED
IS DONE**

An epitome of the menace to medicine from economic sins is beautifully set forth in a recent issue of the *Bulletin of the Wayne County Medical Society* by Dr. L. L. Bigelow of Columbus,

Ohio. The following excerpt is highly illuminating. We quote: To expect the physician, however, to be familiar with these multiple fields with their unnumbered variables, incapable of that precise, experimental, scientific study through which in his own domain, he has made such notable gifts to humanity; to enlarge thus the problem of medicine out of all reason; and to judge and condemn a doctor by what he faces and not by what he has overcome, is manifestly absurd and unfair.

In numerous articles, in the daily press, and in the weekly and monthly magazines of national circulation, the public is being insistently and persistently assailed with graphic accounts of the short comings and failures of medicine, and its exorbitant charges. "Something must be done about it." The world is ruled by ideas that have the power of penetration and lodgment, or that can be made to penetrate and lodge. These writers, for the most part non-medical so-called experts, or those who are responsible for their lubrications are well aware of the physiological principle of the summation of afferent stimuli; and so the barrage is kept up, in the hope that the threshold of national stimulation will be reached, when something will be done about it. What that something is to be, is a matter of vital concern to the medical profession, and of still more vital concern to the public it serves.

If poverty and crime, unemployment and social unrest are due to a miscellaneous worthlessness of medicine in an economic world, of which every normally-attached tonsil, flat foot, deviated septum, or other remedial defect one meets on the street is quite convincing proof, then the problem of these institutes of human relationships is going to be tremendously simplified. Persuade through propaganda a gullible public that the easy road to the promised land where there shall be no more sickness, or sorrow, or doctor bills, lies through the socialization of medicine, and the deed is done.

Where in all this current discussion has it been brought out that the medical profession, dedicated to the alleviation of human suffering and prolongation of human life is ministering to the fundamental basis of all values of every kind—spiritual, intellectual, esthetic and material?

IT COSTS ONE HUNDRED TWENTY-ONE DOLLARS TO JOIN THE STATE AND COUNTY SOCIETIES OF CALIFORNIA

The following item is taken from the *New England Journal of Medicine*, March 27, 1930:

"Cost of membership in a State Medical Society." A note to Dr. A. K. Stone, treasurer of the Massachusetts Medical Society, from a doctor who has moved to the West contains the information that it costs one hundred and twenty-one dollars to join the state and county societies of California.

A fellow pays only eight dollars for the same privilege in Massachusetts. This is an argument in favor of generous support of our Society and the Library.

Figure out how much has been saved during the time a fellow has been a member of the Massachusetts Medical Society as compared with the California doctor. This may be an appeal for generous support of the Society and its coordinating body, the Boston Medical Library. An average contribution of one hundred dollars by each member of the Society now will bring the fund almost to the objective.

THE SPAN OF LIFE AND THE AVERAGE AGE AT DEATH ARE NOT SYNONYMOUS

A FEELING OF FALSE SECURITY HAS BEEN EN-
GENDERED IN THE AVERAGE MIND THROUGH
THE FALLACIOUS STATEMENT THAT
THE AVERAGE AGE HAS BEEN
DOUBLED AND THE SPAN
OF LIFE INCREASED

The majority of people fail to distinguish between the span of life of the human race and the average age at death of individuals.

The expectation of life rather than the length of life is the utmost that the science of sanitation and public health work has been able to achieve.

Unfortunately the tremendous advances made in this direction have misled many over optimistic enthusiasts, into the belief that man has found methods for prolonging the span of life, of the race, and has added to its longevity.

This is not the case. More persons live to maturity before death overtakes them. The av-

erage life of individuals is greater but not the span of life. *There are no more centenarians nor "Grand old men" than within memory.* But improved sanitation and greater care has reduced infant mortality. *More babies grow up to die than did formerly,* but while the number of adult deaths has increased, the *age* of adult deaths or the span of life has not.

The expectation of life indicates the average age to which people may expect to live and the average age at death is analagous in its scope. The span of life indicates the maximum number of years that man may live, as a mortal being.

This distinction must be reckoned with before accurate statements and comparisons can be made.

Figures upon which optimistic statements are based result from the tremendous diminution of deaths during infancy and childhood. Elimination of preventable ills such as immunization against smallpox, diphtheria, typhoid fever, general hygiene's higher standards and better supervision of food and water supplies, and sewage disposal operate to make more men live longer. That is all. As Louis I. Dublin remarked before the American Public Health Association in October, 1929:

"Nothing has happened to encourage the hope that the span of life may be lengthened."

We have shown that there is a marked decrease in the preventable disease due to a lessening of contagion and the diseases due to malnutrition in infancy and childhood, on the other hand there has been a marked increase in what is known as the degenerative disease which appear after middle life such as heart disease, diseases of the arteries and circulatory system, cancer, Bright's disease. It is perfectly obvious, therefore, that the span of life has not been prolonged and that life still has its natural limitations.

EXAMINATION OF AUTOMOBILE DRIVERS SHOULD APPROXIMATE THAT OF DEPARTMENT OF COMMERCE FOR AIRPLANE PILOTS

That moral and mental fitness as well as physical standards should enter into requirements for automobile drivers as a public safety measure seems to be pretty well agreed upon. Cor-

robortations come from many sections of the results of the findings of the traffic committee of the medical society of the District of Columbia to the effect that relatively few motor accidents occur because of defects of sight and hearing but that many are due to defects of mental and moral responsibility.

There would seem to be necessary an extension of the automobile licensing law to make it imperative to demonstrate mental and moral fitness through an examination of applicants in this respect on the lines of the examination of airplane pilots as required by the Department of Commerce.

PRIVATE TAX PAYERS PAY BURDEN OF BUCK-PASSING THAT RUINS MED- ICAL PROFESSION

Acceptance of the current tendency to pass responsibility to the federal or the state and municipal governments is resulting in a system of overcentralization of government that is not only devastating to democracy but that is piling up such a burden on the private taxpayer that citizens of the United States will soon be confronted with the unpleasant task of paying out their last cent for their own delivery into a state of socialistic despotism. Nowhere are the workings of this perniciousness more apparent than in the efforts to effectually centralize the practice of medicine.

Already sixty-two (62%) of all the hospitals in the United States are tax owned or tax supported by government. state, county or municipal assessment.

Correspondence

THE ILLINOIS STATE MEDICAL SO- CIETY CAN SUCCESSFULLY SPONSOR AND CONDUCT CRIPPLED CHIL- DREN'S CLINICS, UNDER THE AUSPICES OF THE COUNTY SOCIETIES

TO THE EDITOR:

Some people have the idea, that the Illinois State Medical Society cannot sponsor and conduct Crippled Children's Clinics, under the auspices of the County Societies. I want to report a very successful clinic that has been in operation for the past three years, and is still going

strong. Three years ago, the Warren County Medical Society asked the Scientific Service Committee,—A sub-committee of the Educational Committee, for assistance in conducting a Crippled Children's Clinic to be held in Monmouth. The Committee arranged with Dr. Philip H. Kreuscher, of Chicago, to come to Monmouth and to conduct the clinic, all arrangements were made by the Warren County Society.

Some years ago, we had had a Warren County Crippled Children's Association, organized to make a survey, solicit funds, and aid poor and worthy cripples, to get the proper care, braces, and supervision. Three local ladies have "carried on" the work that had been neglected by others. These ladies were told of our clinic plans, and asked to cooperate with us. This they have done to the maximum degree. When we had the first clinic, these ladies, with others, brought in as many crippled children as one clinician could care for, in one day. Records were kept in triplicate, one copy went to the family physician, one was retained in the Monmouth Hospital, where the clinics were held, and the other retained by the ladies, who hired the stenographers to take the histories, examination findings, and suggestions of the clinicians.

We have had these clinics regularly, every six months. They have been increasing in popularity. Members of the Warren County Society, and physicians from other cities, have attended them, and have profited by their attendance. It was gratifying to see many cases improved from time to time, as clinics were held, showing that the necessary follow-up work was being done.

On Wednesday, March 5, the regular Clinic was held. Dr. Kreuscher was assisted by Dr. S. C. Woldenberg of Chicago. An operative clinic was conducted in the forenoon, with interesting cases, one was a Sprengel's Deformity, in a lad of ten years. In the afternoon, both Dr. Kreuscher and Dr. Woldenberg saw many patients. At this particular clinic, more new cases were in attendance, than have been seen at any clinic since that first clinic three years ago. We believe that the principal factor in the success of our clinic, has been the unusual degree of co-operation received from various organizations interested in this type of work. Realizing that clinics for the care of crippled children can only be satisfactorily conducted and managed by medically trained scientific people, these coopera-

tive organizations have been principally interested in getting patients to the clinic, and seeing that the proper after care is actually given by the family physician. Cooperation received has been 100 per cent., we have had no arguments, and no overlapping of work.

It is the opinion of the Warren County Medical Society, that any County Society desiring to conduct a similar Crippled Children's Clinic, can do so, by arranging through Miss Jean McArthur, the Secretary of the Educational Committee with the Scientific Service Committee of the Society. The Illinois State Medical Society has within its membership, many competent Orthopedic Specialists who will assist in every way possible to make such a clinic successful.

This work is no longer an experiment, as is shown in the case of the Warren County clinic which has been in operation for three years. The actual keynote of its success, has been co-operation.

HAROLD M. CAMP, M. D.

CONGRESSMAN RAINEY ACKNOWLEDGES PROTEST ON PORTER BILL

March 22, 1930.

Dear Doctor Morony,
Breese, Illinois.

I thank you for your communication with reference to the Porter Narcotic Bill. I assure you I will carefully scrutinize this bill. I do not want to support any measure which will be a handicap to physicians.

HENRY T. RAINEY,
*Representative in Congress from
20th Illinois District.*

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announced the following open competitive examinations:

Senior Medical Technician, \$2,000 a Year

Medical Technician, \$1,620 a Year

(a) Bacteriology.

(b) Roentgenology.

Applications for senior medical technical and medical technician must be on file with the Civil Service Commission at Washington, D. C., not later than May 7, 1930.

The examinations are to fill vacancies in the positions of laboratorian and assistant laboratorian in the United States Veterans' Bureau, and in positions requiring similar qualifications.

The entrance salaries are \$2,000 a year for senior

medical technician, and \$1,620 a year for medical technician. Higher-salaried positions are filled through promotion.

Competitors will not be required to report for examination at any place, but will be rated on their education and training, and on their experience.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or custom-house in any city.

ROENTGEN TREATMENT OF VAQUEZ'S DISEASE

From the cases referred to in the literature and from the experience of Guido Milani, San Francisco (*Journal A. M. A.*, Oct. 19, 1929), in two cases, he feels justified in concluding that roentgen therapy represents the most efficacious and the most certain means for the cure of Vaquez's disease, and, when it is well applied and regulated, and accurately supervised, gives brilliant and lasting results, arresting the fatal evolution of the disease. Only time and experience will tell how long the state of well being of these patients will last. Some months ago his first patient stated that the number of red corpuscles was about 5,000,000 and that she was in good health. Three years has passed since the last irradiation. As to the organs that must be irradiated, it is apparent that irradiations of the spleen have not given favorable results, though repeatedly tried. Irradiation of the flat bones will sometimes result in a slight improvement, which, however, is transient. In fact, in his first patient, after roentgen therapy of the sternum and of the vertebral column, a slight improvement was noticed, both in the number of red corpuscles and in the general condition; but after a short time the red corpuscles increased again and the condition of the patient became the same as before. In his second patient, roentgen therapy of the flat bones did not result in any improvement. When, on the other hand, the irradiations were applied to the long bones, the number of red corpuscles decreased to normal; the spleen returned to its physiologic limits; the high red coloring of the face diminished and the hemorrhages disappeared, as did all the other subjective secondary symptoms. The happy outcome of this therapy brings a clinical contribution of great value to the pathogenesis of this disease, because it shows clearly that the element responsible in the hematologic and clinical picture of the disease is the marrow of the long bones, on which the unknown etiologic factor acts almost exclusively, and it indicates the method to be followed in the treatment of polycythemia.

CRUEL AND UNUSUAL

An Aurora newspaper calls attention to a nursing bottle advertisement which concludes with: "When the baby is done drinking, it should be unscrewed and laid in a cool place under a tap. If the baby does not thrive on fresh milk, it should be boiled."—*Bottles.*

ILLINOIS STATE MEDICAL SOCIETY

EIGHTIETH ANNUAL MEETING JOLIET, ILLINOIS

MAY 20, 21, 22, 1930

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SECTION OF EYE, EAR, NOSE AND THROAT

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Committee on Exhibits—Raymond Brown, *Chairman*; A. Shreffler, W. Martin, R. McGinnis, H. Patterson and W. L. Benishek.

Committee on Women's Auxiliary—Marion Bowles, *Chairman*; Mrs. L. J. Fredrick, Mrs. A. L. Shreffler, Mrs. Roy Leach, Mrs. Grant Houston and Mrs. Bernard Klein.

LADIES' ENTERTAINMENT

The Joliet Committee on Arrangements have not as yet announced definite plans for the entertainment of the ladies who will attend the meeting but they say that the ladies will be well cared for and that the Ladies' Committee is working out their program at this time, which will be announced in detail in the official program to appear in the May JOURNAL.

"THE STAG"

After the opening meeting on Tuesday evening, May 20, 1930, the Will-Grundy County Society will be host to the visiting members of the male sex. The nature of the program has not yet been announced, as final details are not yet completed, but it will be of interest to all of

the men at the meeting, and we have the assurance that we will be "royally entertained"

MEETINGS OF THE HOUSE OF DELEGATES

Tuesday Afternoon, May 20, 1930

3:00 P. M.—Meeting called to order by the President F. O. Fredrickson, for reports of Officers, the Council, Committees and to transact other business to come before the House.

Thursday Morning, May 22, 1930

8:30 A. M.—Meeting called to order by the President for election of Officers, Councilors, Committees, Delegates to the American Medical Association, report of Resolutions Committee and for the transaction of other business than may come before the House.

SECRETARIES' CONFERENCE

Tuesday Morning, May 20, 1930

10:00 A. M.—"The County Medical Society—Its Duties and Responsibilities in Relation to Public Health," Arlington Ailes, La Salle.

10:20 A. M.—"The County Medical Society and Its Relation to the Individual," Lee O. Frech, Decatur.

11:00 A. M.—"Problems and Responsibilities of the Medical Editor," Charles J. Whalen, Editor, Illinois Medical Journal, Chicago.

11:30 A. M.—"A Few Informal Remarks" Olin West, Secretary and General Manager, American Medical Association, Chicago.

GENERAL SESSIONS

Tuesday Evening, May 20, 1930

7:30 P. M.—Meeting officially opened by President, F. O. Fredrickson, Chicago.

Invocation—Reverend Walter McPherson, Pastor, Universalist Church, Joliet.

Address of Welcome, Honorable George Schring, Mayor of Joliet.

Address of Welcome, Grant Houston, President, Will-Grundy County Medical Society, Joliet.

Report, Chairman of Committee on Arrangements, B. G. Wilcox, Joliet.

Address, Mrs. George Thomas Palmer, Springfield. (Subject to be announced.)

This meeting is open to the public.

Wednesday Afternoon, May 21, 1930

3:00 P. M.—Oration in Surgery, Dean D. Lewis, Professor of Surgery, Johns Hopkins

University Medical School, Baltimore. (Subject to be announced.)

Wednesday Evening, May 21, 1930

7:30 P. M.—President's Address, F. O. Fredrickson, President, Illinois State Medical Society, Chicago, "A Forward Look into Medical Practice."

8:00 P. M.—Oration in Medicine, Martin E. Rehfuss, Associate Professor of Medicine, Jefferson Medical College, Philadelphia, "Medicine of the Future—What Can We Expect?"

These addresses follow the President's Dinner in the Banquet Hall, Masonic Temple.

Thursday Afternoon, May 22, 1930

1:30 P. M.—Induction of the President-Elect, William D. Chapman, Silvis.

1:45 P. M.—Report of the House of Delegates.

PRESIDENT'S DINNER

The Annual President's Dinner will be held at the Masonic Temple on Wednesday Evening, May 21, 1930, at 6:30. This is an interesting function, honoring our President, F. O. Fredrickson, and the Past-Presidents of the Illinois State Medical Society will be guests at the dinner.

It is hoped that every member and guest attending the meeting will be present at the President's Dinner.

Dr. J. P. Simonds will act as toastmaster owing to the recent death of the immediate Past-President Dr. J. E. Tuite.

A suitable dinner program has been arranged by the Committee.

Tickets for the dinner can be procured at the Registration Desks, from the Chairman of the Banquet Committee, Dr. Walter Hedges, or from any member of the Committee.

The President's Address and the Oration in Medicine will follow the dinner, the meeting in charge of the first Vice-President, R. L. Green.

WOMEN'S AUXILIARY

The Auxiliary is now arranging an elaborate and interesting program which has not yet been announced. Full particulars will be printed in the Official Program, to appear in the May JOURNAL. It is hoped that the ladies will turn out in large numbers this year. The Auxiliary has been growing rapidly, as reports of officers to be given will show.

SECTION PROGRAMS

SECTION ON MEDICINE

Frank Deneen, *Chairman*

I. D. Snorf, *Secretary*

Tuesday Afternoon, May 20, 1930

Chamber of Commerce

2:00 P. M.—Milk Sickness, William E. Walsh, Morris.

2:30 P. M.—Mental Hygiene, Frank P. Norbury, Jacksonville. Discussion opened by Dr. Schroeder, State Criminologist.

3:00 P. M.—Physical Diagnosis, Logan Clendenning, Kansas City, Mo. (By invitation.)

4:00 P. M.—Neurology in Its Relation to General Practice, LeRoy Sloan, Chicago.

4:30 P. M.—Differential Diagnosis of Angina Pectoris and Similar Pains Produced by Arthritis, Don Sutton, Chicago.

Wednesday Morning, May 21, 1930

9:00 A. M.—Granulocytosis, George Parker, Peoria.

9:30 A. M.—Chairman's Address, Frank Deneen, Bloomington.

10:00 A. M.—The Nature of Obesity, Louis H. Newburgh, Ann Arbor, Michigan. (By invitation.)

11:00 A. M.—Colloids of the Blood Serum in Health and Disease, illustrated by films, Frank Wright, Chicago.

11:30 A. M.—Treatment of Paresis With Sulphur in Olive Oil, Charles F. Read, Chicago.

Wednesday Afternoon, May 21, 1930

Joint session with Section on Surgery.
3:00-6:00 P. M.:

1. The Mechanism of Posterior Occiput and the Application Thereto of Posture in Its Treatment (with illustrations), Gilbert Fitz-Patrick, Chicago.

2. Certain Aspects of Ectopic Surgery, A. J. Lennon, Joliet.

3. The Corporation Profession, Charles B. Reed, Chicago Medical Society, Chicago.

4. The Care of the Wounded of the Division in the Field, Major Roy K. Ogilvie, M. C., U. S. A.

Thursday Morning, May 22, 1930

9:00 A. M.—Abdominal Pain in Children, John F. Carey, Joliet.

9:30 A. M.—Prognosis of Nephritis in Children, Andrew Aldrich, Winnetka.

10:00 A. M.—Some Observations on the New Born, A. H. Parmelee, River Forest.

10:30 A. M.—Papers by Charles Stulik, Chicago, and Joseph Brennehan, Winnetka. Subjects to be announced.

SECTION ON SURGERY

Frank L. Brown, *Chairman*

J. H. Bacon, *Secretary*

Tuesday Afternoon, May 20, 1930

1:00 P. M.—Surgery of the Chest. Ralph B. Bettman, Chicago. Discussion opened by Don Deal, Springfield.

1:30 P. M.—Injuries to the Bony Spine as Related to Arthritis, Sumner L. Miller, Peoria. Discussion opened by John R. Harger, Chicago.

2:00 P. M.—A Few Essential Principles of Amputations, S. L. Governale, Chicago. Discussion opened by E. B. Montgomery, Quincy.

2:30 P. M.—The Surgical and Economic Problems of Infantile Paralysis. Edwin W. Ryerson, Chicago. Discussion opened by Hugh Cooper, Peoria.

3:00 P. M.—Principles Which Render Present Day Surgery of General Medical and Surgical Interest, George V. I. Brown, Professor of Plastic Surgery, University of Wisconsin, Milwaukee. (By invitation.)

4:00 P. M.—Symptoms of Ruptured Gastric and Duodenal Ulcer, E. P. Coleman, Canton. Discussion opened by Warren Johnson, Chicago.

4:25 P. M.—The Management of the Debilitated Surgical Patients. Rollo K. Packard, Chicago. Discussion opened by Carl E. Black, Jacksonville.

4:45 P. M.—Fascial Sutures in the Repair of Inguinal Hernia, illustrated by motion pictures, William J. Pickett, Chicago. Discussion opened by E. S. Murphy, Dixon.

Wednesday Morning May 21, 1930

8:30 A. M.—Surgery of the Thyroid, Wilbur E. Bowen, Peoria. Discussion opened by Carl Hedblom, Chicago.

8:50 A. M.—Thyroidectomy for Thyrotoxicosis for Patients Beyond Fiftieth Year, J. M. Mora, Chicago. Discussion opened by E. P. Sloan, Bloomington.

9:15 A. M.—The Preservation of the Parathyroids in Goiter Surgery, George M. Curtis,

Chicago. Discussion opened by Lindon Seed, Chicago.

9:45 A. M.—Rectal and Perirectal Drainage in Deep Pelvic Abscess, Charles J. Drueck, Chicago. Discussion opened by Clement Martin, Chicago.

10:10 A. M.—Factors That Make for Safe Gall Bladder Surgery, John J. Haeberlin, Chicago. Discussion opened by Clyde Finley, Galesburg.

10:30 A. M.—Surgery of the Pendulous Abdomen and Breast, illustrated by motion pictures, Max Thorek, Chicago.

11:00 A. M.—Surgery of the Hypophyseal Tumors, George J. Heuer, Professor of Surgery, University of Cincinnati, Cincinnati, Ohio. (By invitation.)

12:00 M.—Election of Officers of Section on Surgery for 1931.

Wednesday Afternoon, May 21, 1930

Joint meeting with Section on Medicine.

3:00 P. M.—Symposium on Obstetrics:

1. The Mechanics of Posterior Occiput and the Application Thereto of Posture in Its Treatment (with illustrations), Gilbert Fitz-Patrick, Chicago.

2. Certain Aspects of Ectopic Surgery, A. J. Lennon, Joliet.

4:30 P. M.:

3. The Corporation Profession, Charles B. Reed, President, Chicago Medical Society, Chicago.

4. The Care of the Wounded of the Division in the Field, Major Roy K. Ogilvie, M. C., U. S. Army.

SECTION ON EYE, EAR, NOSE AND THROAT

Walter Stevenson, *Chairman*

Harry S. Gradle, *Secretary*

Tuesday, May 20, 1930. 2 P. M.

1. The Diagnosis of Glaucoma. J. H. Roth, Kankakee. Discussion opened by J. Duane, Peoria.

2. A New Method of Local Anesthesia for Alleviating Pain of Incising a Peritonsillar Abscess, M. R. Guttman, Chicago. Discussion opened by C. K. Gabriel, Quincy.

3. Colds, Complications and Sequelae, G. P. Conger, Oak Park. Discussion opened by Frank Novak, Chicago.

4. The Solitary Choanal Polypus, S. M.

Morwitz, Chicago. Discussion opened by S. Salinger, Chicago.

5. Important Factors in The Diagnosis of Foreign Bodies in the Air Passages, C. D. Sneller, Peoria. Discussion opened by E. McGinnis, Chicago.

6. A Case of Bone Formation in the Choroid, S. J. Meyer, Chicago. Discussion opened by Thomas Allen, Chicago.

7. Mirrors of the Para-Nasal Sinuses, J. A. Cavanaugh, Chicago. Discussion opened by H. R. Wormley, Rockford.

8. The Indications for Simple Mastoid Operation, I. Muskat, Chicago. Discussion opened by W. W. Gailey, Bloomington.

9. Frequency of Atypical Surgical Mastoiditis in Children, M. H. Cottle, Chicago. Discussion opened by George Woodruff, Joliet.

(There will be three more papers on the program, to be announced in the Official Program, to be printed in the May JOURNAL.)

Tuesday Evening, May 20, 1930

6:30 P. M.—Annual Banquet of the Section, with two short speeches and entertainment.

Wednesday, May 21, 1930

1. The Treatment of Squint in Children, C. S. O'Brien, Iowa City, Iowa. (By invitation.)

2. Diagnosis and Treatment of Commoner Affections of the Throat, J. C. Beck, Chicago.

3. Etiology and Treatment of Optic Neuritis, M. Weiner, St. Louis, Mo. (By invitation.)

4. Hyperplastic Sinus Disease in Relation to Retro-Bulbar Neuritis, S. G. Higgins, Milwaukee, Wisconsin. (By invitation.)

5. Modern Therapy of Corneal Infections, S. R. Gifford, Chicago.

6. Diagnosis and Treatment of Chronic Running Ear, W. P. Wherry, Omaha, Nebraska. (By invitation.)

These papers will be discussed in the afternoon, beginning at 3:00 P. M. following the Oration in Surgery. Each of the Orators will have a separate room, in which there will be a continuous discussion by those members interested in that particular subject.

Adjournment at 5:00 P. M.

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane, *Chairman*

Charles H. Miller, *Secretary*

1. Diphtheria and Scarlet Fever, Arling-

ton Ailes, La Salle. Discussion opened by H. O. Orvis, Winnetka.

2. Recent Advancements in the Epidemiology of Intestinal Diseases, Lloyd Arnold, Chicago. Discussion opened by O. A. Goldsmith, Chicago.

3. Silicosis and Its Control, R. T. Pettit, Ottawa. Discussion opened by S. C. Beach, Chicago.

4. Results of Seventeen Years of Periodic Health Examinations in Industry, Hart E. Fisher, Chicago. Discussion opened by S. C. Plummer, Chicago and C. W. Hopkins, Chicago.

5. Personal Hygiene, Gottfried Koehler, Chicago.

6. Smallpox, C. S. Nelson, Springfield. Discussion opened by I. D. Rawlings, Chicago.

7. The School Physician in a Community Health Program, A. A. Crooks, Peoria. Discussion opened by F. A. Turner, Rockford.

8. The Relation of Diseases of Animals to Public Health, Robert Graham, Urbana. Discussion opened by W. A. Evans, Chicago, and Colonel Wentworth, Chicago.

9. The Health Department and the Practicing Physician, Harold M. Camp, Monmouth. Discussion opened by H. H. Tuttle, Springfield.

10. The Modern Rural Health Practice, Arthur T. McCormack, State Health Officer, Louisville, Ky. (By invitation.) Discussion opened by Isaac D. Rawlings, Chicago.

11. Epidemic Meningitis, Archibald Hoyne, Chicago.

12. Some New Economic Phases of State and Local Hygiene Program, Herbert E. Phillips, D.D.S., Chicago. (By invitation.)

13. Domestic Chemical Refrigeration in Relation to Public Health, A. H. Kegel, Chicago.

14. Administrative Control and Early Diagnosis of Tuberculosis, George T. Palmer, Springfield. Discussion opened by Ethan Allen Gray, Chicago.

15. Health Appraisals, John M. Dodson, Chicago.

SECTION ON RADIOLOGY

I. S. Trostler, *Chairman*

Henry W. Grote, *Secretary*

1. Some Remarks on Radiation Treatment of Toxic Goiter, Isaac Gerber, Providence, R. I. (By invitation.)

2. The effects of X-Rays on the Normal

Thyroid and Parathyroid of Animals, Andrew C. Ivy, Otis M. Walters and R. J. Anson, Chicago. (By invitation.)

3. The Pathology of Uterine Cervix and Treatment, B. H. Orndoff, Chicago.

4. Persistent Thymus from the Roentgenological Standpoint. Wilbur H. Gilmore, Chicago.

5. The Value of the Lateral View of the Chest, C. H. Warfield, Chicago.

6. A Device with Fixed Pressure and Volume Limits for the Insufflation and Lipiodol Methods for Determining Tubal Patency, Harry M. Jones, Chicago.

7. A New Method of Medical Diagnosis, Based Upon Diffraction Analysis of Tissue Structure, G. S. Bucher and G. L. Clark, Ph.D., Champaign.

8. Title to Be Announced, Edward L. Jenkinson, Chicago.

9. The Value of the X-Ray Examination of the Appendix, James T. Case, Chicago.

10. Genito-Urinary Anomalies. Otis W. Britt, Waterloo, Iowa. (By invitation.)

11. Further Observations on Irradiation of Tonsils, Since 1924, Harry D. Magee, Peoria.

12. Blood Chemistry Diagnosis of Cancer, James S. Archibald, Decatur.

RULES GOVERNING THE PRESENTATION OF PAPERS

All Papers read by members shall be limited to twenty minutes and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion on any one subject.

All papers read before the Society or any of its Sections shall become the property of the Society. *Each paper shall be deposited with the Secretary of the Section when read* and the presentation of a paper to the Illinois Medical Society shall be considered tantamount to the assurance on the part of the writer that *such paper has not already appeared and will not appear in medical print before it has been published in the ILLINOIS MEDICAL JOURNAL.*

A Paper not heard in its scheduled turn shall be held subject to the call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

All subjects shall be confined strictly to the subject in hand.

No Paper shall appear in the printed transactions of the meeting unless read in full or in abstract.

(From the By-laws of the Illinois State Medical Society.)

EXHIBITORS AT 1930 ANNUAL MEETING

American Medical Association, 535 North Dearborn Street, Chicago.

American X-Ray Corporation, 711 West Lake Street, Chicago.

A. S. Aloe Company, 1819 Olive Street, St. Louis, Missouri.

The Burdick Corporation, Milton, Wisconsin.

Cameron's Surgical Specialty Company, 666 West Division St., Chicago.

The DeVilbiss Company, Toledo, Ohio.

De Puy Manufacturing Company, Warsaw, Indiana.

H. G. Fischer Company, Inc., 2337 Wabansia Avenue, Chicago.

General Electric X-Ray Corporation, 2012 W. Jackson Blvd., Chicago.

Gerber Products Division, Freemont Canning Company, Freemont, Mich.

Horlicks Malted Milk Corporation, Racine, Wisconsin.

Huston Brothers Company, 185 North Wabash Ave., Chicago.

Kellogg Company, Battle Creek, Michigan.

Illinois State Department of Health, Springfield, Illinois.

Illinois Tuberculosis and Health Association, Springfield, Illinois.

Medical Protective Company, 360 North Michigan Blvd., Chicago.

Mellins Food Company, 177 State Street, Boston, Mass.

M. & R. Dietetic Laboratories, Columbus, Ohio.

V. Mueller and Company, Ogden Avenue and Van Buren St., Chicago.

Orchard Hill Camp, St. Charles, Illinois.

Chas. H. Phillips Chemical Company, 170 Varick Street, New York City.

Petrolagar Laboratories, 536 Lake Shore Drive, Chicago.

Post-Graduate School of Surgical Technique, 2512 Prairie Avenue, Chicago.

Sharp & Smith, 65 East Lake Street, Chicago.

W. B. Saunders Company, West Washington Square, Philadelphia.

Arthur L. Shreffler, Joliet.

Standard Pharmacal Company, 847 W. Jackson Blvd., Chicago.

E. P. Sloan, Bloomington.

Swan-Myers Company, Indianapolis.

Sutliff & Case Company, Inc., Peoria.

Tailby-Nason Company, Boston.

Williams Iowa Supply, Iowa City, Iowa.

Wm. W. McMaster, Peoria.

Zimmer Manufacturing Company, Warsaw, Indiana.

NOTES ON EXHIBITS

The American Medical Association will have an interesting Educational exhibit showing the work the Association is doing for the physicians of the country. Among the exhibits will be some very interesting material from the Bureau of Investigation. The Council on Pharmacy and Chemistry, the Council on Medical Education and Hospitals and other Departments of the Association will be represented likewise. This exhibit should be of intense interest to all members and guests at the meeting as an evidence of the great work the Association is doing. *HYGEIA*, the reliable Health Magazine for the Laity, will be featured in the exhibit and those not familiar with this interesting Journal should be thoroughly convinced that it has an appeal which should place it on the table of every professional office in America.

The American X-Ray Corporation will exhibit a model of an X-ray unit that, since its introduction of fairly recent date, has proven of exceptional value. These small units are so built that the X-Ray plant, consisting of transformer and control as well as the full range tube stand, X-Ray tube and table, if desired, are all as one unit. There is eliminated the necessity of attaching aerial leads to the ceiling, as these aerial leads are also a part of the unit. The numerous methods of assembling the apparatus enables the individual doctor to have his requirements thoroughly complied with, with a minimum space consumption and a minimum investment. American X-Ray Corporation manufacture apparatus of larger capacities and are able to thoroughly meet the requirements of the largest to the smallest institution. The factory and main offices are located in Chicago and there is a permanent invitation to the profession to call at the factory any time it is convenient.

The A. S. Aloe Company of St. Louis, Chicago and Los Angeles, will have an interesting exhibit showing an appropriate layout of the latest in Physio-Therapy Apparatus and White Steel Furniture. A special feature of the Aloe Exhibit will be the showing of the moderately priced "GRAVES" Hydraulic Lift Office Chair-table and a complete line of Chrome Plated instruments. The Aloe representatives will be pleased to show anything to physicians that they may be particularly interested in and to meet many of their former friends.

The Burdick Corporation, Milton, Wisconsin, will exhibit a complete line of Light Therapy Equipment. This will include Air and Water-cooled Quartz Lamps and a complete line of Zoalite Infra-red Lamps. A feature of especial interest will be the new type reflector for the Air-cooled Lamp which approximately doubles the ultra-violet intensity as compared with reflectors of former types. This new type reflector can be supplied for any previous model of the Burdick Air-cooled Lamp. Representatives from the Burdick Branch Office at Chicago, from the Dick X-Ray Company and from

the V. H. Hurley Company will be present at the Burdick booth.

The value of "High Visibility in Diagnosis and Surgery," as applied to all phases of major and minor diagnostic, operative and therapeutic procedure will be fully demonstrated at the clinical exhibition of Cameron's Surgical Specialty Company, Chicago, in space No. 11. The demonstration of Cameron's Cauteries will also be a unique feature of the exhibit.

The DeVilbiss Company, Toledo, Ohio, will show a complete line of DeVilbiss professional and patient sprays. All DeVilbiss professional sprays are chromium plated, which prevents tarnishing and makes their good appearance more permanent. The tips are now turned out of bar steel and the threads are more accurate and strong. The patient atomizers have been redesigned so that heavy oils may be sprayed with but little pressure. The DeVilbiss Company will be pleased to show these new features and their entire line to all physicians interested in these necessary articles.

H. G. Fischer and Company, Inc., will exhibit some very interesting equipment, which should appeal to all interested in electrical accessories. There will be a new, simple and inexpensive Surgical Tissue Cutting Outfit, a Combination Radiographic and Fluoroscopic Unit with every approved and necessary feature incorporated in the best machine of its kind, but sold at a low price; diathermy portables and diathermy cabinets; a combination Galcanic and Contractural Currents Generator with a distinctly new cabinet and finish, as well as ultra-violet lamps, accessories and the like. There will be several representatives of the Company at the exhibit who will be pleased to render any possible service to those interested in physical therapy or X-Ray apparatus.

SEE THE ELECTROCARDIOGRAPH IN OPERATION AT THE VICTOR BOOTH

Only those who have operated one of the older type electrocardiographs can appreciate the simplicity and ease of operation of the instrument on demonstration at the booths of the General Electric X-Ray Corporation, formerly Victor X-Ray Corporation. By a method similar to radio amplification, it "steps up" the feeble heart current to a point where it will actuate a sturdy Galvanometer, thereby eliminating the fragile quartz string required in former types because of the infinitesimal actuating current. No longer need a hospital be wired for electrocardiographic service—this instrument being entirely self contained, is simply wheeled to the patient's bedside. No special technical skill is needed to operate it; anyone can produce cardiograms of excellent diagnostic value after an hour's instruction. In addition to the electrocardiograph there will be shown a representative collection of Physical Therapy apparatus, also an interesting exhibit of radiographs.

DePuy Manufacturing Company of Warsaw, Indiana, will exhibit many new models in Aluminum X-Ray Splints, in Booth No. 22. This company having served the profession with pleasure for over a half century, makes a line of splints which meet with the approval

of radiographers and surgeons over the entire country. DePuy Splints are transparent to the X-Ray, are amply ventilated and are a product of quality at a moderate price. Physicians recognize the merits of a standard product and have confidence in a house which serves them well. The DePuy exhibit will be in charge of their Illinois representative, the well known red-head, W. D. Bates, who will explain the use of splints for any fracture problems at their booth.

Gerber's Unseasoned, Strained Vegetable products, the New A. M. A. accepted foods for infant feeding and special diets, will be shown again this year in Booth No. 5. These foods have attracted wide attention in medical circles because of the opportunity they offer for more perfect control of the infant vegetable diet and being unseasoned, can be used in a wide variety of adult diet cases. Attendants at the booth will be pleased to explain their use, preparation and any other information that may be desired concerning these Strained Vegetable Products.

Huston Brothers Company, one of the oldest Surgical Instrument Houses in the country, will exhibit an exceptionally good and interesting line of instruments in Spaces 16 and 28. Their line will include practically everything on the market in the line of Chrome Plate and rustless material. Among other new and interesting instruments shown will be a new Tonsil Snare that works with great efficiency without a wire or a cutting blade. They will exhibit a "Whisper-fone," a small electrical hearing instrument imported from England, said to be the smallest device of its kind and highly efficient. A Tonsil Tier which holds the finest catgut, without danger of breaking and making an automatic tie; a new Abdominal supporter, giving constant and gentle upward pressure, will be among the many new and interesting devices in the Huston Exhibit.

Horlick's Malted Milk Corporation are again among the exhibitors and plan unusual activities in the interests of their products, Horlick's, the original Malted Milk, natural and chocolate flavors, powder and tablet form and Horlick's Malted Milk Modifier, a maltose and dextrin product. The Horlick Exhibit will occupy Space No. 51 and their representatives will be pleased to greet all in attendance at the meeting.

The Illinois State Department of Health will have a highly interesting Educational Exhibit showing the work the Department is doing to improve Health Conditions in Illinois. The State Health Department asks the cooperation of all physicians in the carrying out of their work, realizing the necessity of perfect cooperation as a factor in the success of their plans.

The Illinois Tuberculosis and Health Association will have an Educational exhibit, showing the work the Association is doing to help in the eradication of the "Great White Plague." This Association is a cooperative organization, which realized the necessity of professional guidance. The new Executive Secretary of the Association, Mr. W. P. Shahan, who recently came to Illinois from Indiana, where he was doing similar work, is anxious to meet the members of the Illinois

State Medical Society and assure them of his desire to work with the Medical profession.

Physicians who are interested in a coffee which may be used in special as well as in normal diets are invited to visit Booth No. 47, where the Kellogg Company of Battle Creek, Michigan, will have a display and demonstration of Kaffee Hag Coffee and other Kellogg products. Kaffee Hag is real coffee, from which it is said 97 per cent of the caffeine has been removed. Visitors at the booth will be served with this caffeine-free coffee and Kellogg's all-bran muffins. Diet suggestions and Prescribed Diet lists will be distributed.

Mead Johnson and Company will have on exhibit its complete line of infant diet materials including "Mead's" Dextri-maltose; Mead's Cod Liver Oil; Mead's Viosterol; Mead's Reolac; Mead's Non-Curdling Powdered Protein Milk and Mead's Non-Curdling Powdered Lactic Acid Milk. There will be for the examination of physicians a complete line of Mead's services such as diets for older children, height and weight charts, etc., all of which are free to members of the medical profession in any quantity desired. Their Illinois representatives will be on hand to meet their friends and to discuss the application of the Mead products to infant feeding problems.

All members of the Illinois State Medical Society and friends are cordially invited to visit Booth No. 34 of the Medical Protective Company, Mr. M. L. Allen of the Peoria office will be delighted to have you call, whether merely to say "hello" and renew old acquaintances or to satisfy yourself on some question of malpractice protection. Consider him at your service and feel free to call upon him for anything which may contribute to making this the most pleasant and successful society meeting you have yet attended.

No argument is needed to emphasize the advantage to the physician of a thorough knowledge of any product that he deems worthy of frequent or only occasional use in the work of his profession. This is the thought that prompts the Mellins Food Company to have an exhibit and the purpose is to give physicians an opportunity to acquire full and complete information relative to the source, nature and amount of food elements present in Mellins Food and to discuss the many conditions where Mellins Food may be used to the advantage of the patient and the satisfaction of the medical attendant.

SIMILAC, a completely modified milk, is being exhibited at Booth No. 25. Representatives of the M. and R. Dietetic Laboratories will be pleased to answer any questions pertaining to the use of SIMILAC either as a complement to the breast feeding or as a complete diet for infants deprived of breast milk.

V. Mueller and Company of Chicago will have a large exhibit of more than general interest. Many new patterns of surgical instruments that have been developed during the past year, particularly for bone work. The Eye, Ear, Nose and Throat specialist will find much of interest by way of some new types of instruments for this particular work. V. Mueller and Com-

pany as Chicago representatives for Wappler diagnostic instruments will also demonstrate the new Wappler line of ophthalmoscopes, auriscopes, laryngoscopes, etc., as well as new models of cystoscopes. Among these is the smallest cystoscope yet designed for use on children.

The Orchard Hill Camp situated on the beautiful Fox River, just north of the St. Charles Country Club, is an exclusive camp for the younger children. It is interesting to note that practically half of the children at the camp are the sons and daughters of physicians who evidently appreciate the best for their children. The camp is under the personal direction of Dr. R. J. Lambert and Dr. Edith B. Lowry. Physicians interested in the welfare of children should not fail to visit Booth No. 3.

At the Petrolagar Booth there is an active demand for the set of drawings by Tom Jones of the University of Illinois illustrating various types of constipation and bowel conditions. Sets are given free or mailed. They are helpful in consultations with patients and for comparison with roentgenograms. These pictures are distinctive and somewhat different from the usual anatomical drawings of the bowel in that they show the perspective. They are not flat.

Space No. 4 is occupied by the Chas. H. Phillips Chemical Company, makers of the well known products, PHILLIPS MILK OF MAGNESIA, the ideal laxative-antacid, PHILLIPS DENTAL MAGNESIA, a superior tooth paste and PHILLIPS PHOSPHOMURIATE OF QUININE, a dependable appetizer and tonic. It will be worth your while to visit the Phillips Booth and investigate these preparations.

The exhibit of the Post-Graduate School of Surgical Technique comprises charts and drawings upon subjects of interest in surgical anatomy and surgical technique. A projection apparatus shows slides of various surgical procedures as taught and demonstrated in the school. A number of courses are offered in general surgery and in the various surgical specialties.

Sharp and Smith, Chicago, who have been in the Surgical Instrument business for more than eighty-five years, will exhibit a representative line of high grade instruments comparable to their many years of leadership in the Surgical Field. They will be pleased to greet their many friends and demonstrate their many instruments at Booths Nos. 37 and 38.

W. B. Saunders Company, publishers of Philadelphia and London, will exhibit a complete line of all of their titles. Among the newer and more important of these will be Beckman's new Treatment in General Practice, Campbell's New Orthopedic Surgery, Christopher's New Minor Surgery, Graham's new three-volume work on Surgical Diagnosis, the new Mayo Clinic Volume, new editions of Boyd's Surgical Pathology, Blumer's three-volume work on Bedside Diagnosis, Granger's Physical Therapeutic Technique, Jackson and Coates on Nose, Throat and Ear, Wechsler's Neuroses, Norris and Landis' Diseases of the Chest and Physical Diagnosis and the American Illustrated Medical Dictionary.

The Standard Pharmacal Company, 847 West Jack-

son Blvd., Chicago, specializes in the manufacture of pharmaceuticals for the dispensing physician. Their products are made for and sold only to physicians and their service is of particular interest to the physician who dispenses either a part or all of his medicines.

Sales are made exclusively by mail and low list prices and discounts give buyers an opportunity for a substantial saving. The products consist of U. S. Pharmacopoeia and special formula tablets and liquids. Their display will consist of U. S. P. formulary preparations.

Complete catalogue with therapeutic index and samples will be available to any physician visiting the exhibit, or makes request by mail. The exhibit will be in charge of Dr. J. P. Eagan, who will give all information desired relative to the policy or products of the manufacturer.

Sutliff and Case Company, Inc., of Peoria, will exhibit a representative display of their line of Pharmaceutical Specialties, Solu-Caps, Hypodermic tablets, Ointments, Compressed tablets, Fluid-extracts, Tinctures, etc., including a special section devoted entirely to their well known products Thiocyan-Elix, Kolagog, Phytosalicyl, Tin-Ox. The firm especially requests members and visiting physicians to register at their booth, so that a memento of their visit may be mailed to their home address. Mr. Al Gillig, dean of their sales force, and Mr. H. J. J. Norman, their pharmaceutical chemist, will be in constant attendance at their booth and will be pleased to welcome their many friends and others.

Interest in Bacteriophage will undoubtedly draw many physicians to Booth No. 19, where members of the scientific staff of Swan-Myers Company will furnish information and literature on this new development in Biological Therapy. The Swan-Myers Laboratories were the first to be licensed by the United States Government for the manufacture of Bacteriophage and are at present the only laboratories in the country to supply Bacteriophage commercially. They will also have interesting displays of Ephedrine Products, including Swan-Myers Inhalent Number 66, Pollen Extracts and Parasylla, Swan-Myers, a new mechanical laxative that combines Psyllium seed jelly and mineral oil in a pleasing emulsion.

BIG COD FROM NORWAY.—During the fishing season of 1928 a cod of record proportions was taken from the Lofoten waters of Norway for Nason and Company, a/s, the Norwegian subsidiary of Tailby-Nason Company of Boston. This splendid fish, four feet eleven inches long and weighing 30 kilos will form an interesting part of the exhibit of Nason's Palatable Cod Liver Oil, "The Better Tasting Kind," produced at Nason's plants in Norway, at Booth No. 26. Other important features of the exhibit will be the white rats used in testing the oil for its vitamin activity and roentgenographs of the leg bones of rachitic rats showing the progress of the healing induced by Nason's Cod Liver Oil.

Williams Iowa Supply Company, the reliable Surgical Supply Dealers of Iowa City, Iowa, will have an

interesting exhibit in Space No. 17. Representatives of the firm will be present to show the many numbers included in the exhibit and to greet their old friends as well as to meet many new ones.

W. W. McMaster, successor to the well known McMaster and DeKroyft Company of Peoria, will exhibit a large line of Pharmaceuticals, Instruments and Office Equipment. This firm, which dates back to 1860, is always anxious to fill the wants of the medical profession to which they have catered so many years. The exhibit will be shown in Booth No. 21.

ZIMMER Fracture Equipment including Aluminum X-Ray splints, Fracture beds, Extension and suspension apparatus, etc., will be exhibited in Booth No. 33. Representatives of the company will be pleased to answer any questions pertaining to the use of these interesting and essential accessories in the treatment of fractures. Their recent additions to the line formerly shown will be of especial interest to all members of the medical profession.

YOU'VE ALWAYS GOT TO SMILE

BY JAMES J. MONTAGUE

You got to keep on smilin'
 However hard the way,
 Altho you're shy the cash to buy
 Your three square meals a day.
 You may have ketched the measles
 Or else, perhaps the mumps;
 But just the same you must be game
 An' never get the dumps.
 A glum an' gloomy spirit
 The brightest life kin spile
 No matter what complaint you've got
 You've always got to smile.
 You got to keep on smilin'
 An' never heave a sob
 Or pull a moan or spill a groan
 When you have lost your job.
 If wife and kids have left you
 Don't never shed a tear;
 Be gay and glad as ef you had
 A heart plumb full of cheer.
 Remember, livin' single
 Ain't sech an awful trial—
 The clouds you'll find is silver lined
 If only you can smile.
 You got to keep on smilin'—
 There's no sech word as fail—
 Tho by mistake the laws you break
 And get shet up in jail.
 An' even ef they hang you,
 The rope won't hurt you long,
 So while you wait to meet your fate
 Just sing a little song.
 Keep readin' smilin' poems;
 They make hard luck worth while,
 Our recompense for lackin' sense
 Is learnin' how to smile!

—In *Philadelphia Evening Bulletin*.

Original Articles

CO-OPERATION OF THE HEALTH DEPARTMENT WITH THE PRACTICING PHYSICIAN*

ARNOLD H. KEGEL, M. D., D. Sc., F. A. C. S.,

Commissioner of Health

CHICAGO

In the field of preventive medicine the modern trend is toward co-operation between public health administrators and the practicing physician. In times past public health administration was devoted mainly to the control of typhoid fever and to safeguarding the water and milk supplies, but the time has come when these matters are very well regulated and are handled as routine in a well organized department of health.

Now each new administration has new problems to work out. Indeed, public health administration would be a very dull thing if it were merely the matter of caring for these routine affairs. The co-operation between physicians and public health administrators is a necessity beyond all else; it can not be considered anything except a necessity both from the standpoint of the public health administration and that of the physician.

Early in my incumbency as Commissioner of Health of the City of Chicago, I made the statement that it was necessary that there be co-operation between physicians and the Health Department. The statement alone did not get very far. It did not get anywhere, in fact, for that statement had been made many times before, and it soon became quite obvious that it was necessary to find a problem on which the two groups could work together. In attempting to establish co-operation between the two divisions, I believe that it is most necessary of all to find a program which requires a concerted effort on the part of both; that they each have a certain amount of work to do, a certain number of duties to perform, which really require co-operation.

Each one of us here realizes the position that the medical profession has got into with regard to preventive medicine. The tendency of the practicing physician to omit preventive work in his practice is rather a pernicious one. Years

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, Peoria, May 21.

ago the practicing physician should have taken up and worked along the lines of preventive medicine. Departments of health have gradually taken it over, until today it would almost seem that the medical profession feels that it is the duty of the public health administration so to do. This should not be, for various reasons. In the first place, public health administrators can not possibly cover the work of preventive medicine to the degree that this should be done. It would be impossible for them to do it as accurately or as efficiently as the medical profession as a whole can do it.

I wish to tell you how we have arranged in Chicago what we think at this time is quite an ideal plan for bringing together the medical profession and the public health administration. Obviously the problem had to be a vast one. It had to be one in which each would have his duties, wherein each would benefit, and in which the public would benefit to a considerable extent. The problem selected was that of eradicating the defects among school children.

In a survey which was made it was found that eighty-five per cent. of Chicago school children are suffering from defects of one kind or another. Seventy-one percent. of the school children are suffering from defects severe enough to influence the child's progress, to affect his health, and above all to affect his happiness. One hundred fifty-six thousand school children were examined to form this basis. Estimating the total number of Chicago school children as 600,000 would mean that we have 435,000 school children that have defects which require correction.

The program on which we have based our co-operation, and which we hope will be only a beginning of future work, I shall explain to you now. Our plan was first of all placed before the Board of Education, who, upon realizing the importance of eradicating physical defects in school children both from an economical standpoint and from a standpoint of the welfare of the school children, adopted the program as their major objective during the remainder of their term of office. We have their full co-operation.

The social agencies were only too glad to co-operate in such a program, as was the Dental Society, and also the Parent-Teacher Associations. The last to come in and recognize its im-

portance, perhaps because the plan had been placed before them toward the last, was the medical profession. It was about three weeks ago that the Council of the Chicago Medical Society endorsed the program and is now giving it active support.

The City of Chicago is vast in its territory, with a population of over three million; therefore, it was necessary to divide the city into sections. These sections were outlined according to the natural boundary lines which have been laid down by the Council of Social Agencies, dividing the city into forty sections. Our first section was an experimental one, that of the near North Side, bounded by Kinzie street, the River, the Lake and North avenue. The Board of Education provided working and desk space for each one of the Associations that I have mentioned.

The details of the program work out about this way: The Department of Health, through its school physician examines school children, in the presence of parents wherever this is possible. Records are kept of each child, for the purpose of follow-up. A sufficient number of nurses to give us a good follow-up organization have been placed in the district. Children from families which have a family physician are referred back to the physician for care. The physician in turn reports to us when the correction is first begun, and finally when it is completed.

There are many problem cases in the district which I have just mentioned, and also cases where there is wilful negligence. The Council of Social Agencies, through its clearing house, has, I might state, to a certain extent taken over the investigation of the economic status of the patients. Those who can pay nothing whatsoever are referred to clinics; those who can pay a little, or more, are referred to physicians in the district. The North Side Branch of the Chicago Medical Society has appointed a committee, which is at the present time under Dr. Parkes. This committee is taking the name of each one of the children who require correction. They have in turn provided the names of doctors in the district, in the neighborhood, who will take on the correction of the defects found.

Thus far our experimental program, our experimental district, have worked out very well. There is only one hitch in the entire program, as

we see it now, and that is the lack of clinical facilities and the lack of interest of physicians in obtaining corrections to a complete extent.

We find that there are many physicians in the district who rather resent having children sent to them with a diagnosis. Therefore, we have found that it contributes a little bit more to the doctors' happiness, you might say, by reporting to them the defect, rather than the specific diagnosis.

We hope that the plan followed in this experimental district which we have established and in which the North Side Branch of the Medical Society is co-operating with the Department of Health will be extended to all parts of the city. The enthusiasm with which it has been accepted by each one of the agencies and the opportunity grasped by each of the agencies to work with the others whose interests are common, you might say, and who have the welfare of the community and the children at heart evidences their appreciation of the advantageous opening thus given them. I believe it is the first time that such an extensive program of co-operation has been attempted by any health department in the United States.

There are other things, other conditions in which a department of health can co-operate with physicians. I just wish to enumerate some of the things in the City of Chicago which have redounded to the benefit of the children as a whole as well as that of the medical profession. In the first place, the Department of Health has assisted physicians to the number of 955 in establishing a diagnosis of suspected or doubtful cases of communicable diseases. Physicians in Chicago are constantly calling upon the Department of Health to aid them in these cases.

In our school health program in 1928, 63,000 children who were found with defects were referred back to their family physicians to have those defects corrected. Unfortunately, we have no figures as to the number of corrections obtained by this rather loose method of having no follow-up system or check-up as to whether the children really got to the family physician.

The nurses of the Department of Health made calls last year to the number of 80,000 in an effort to get parents to take their children to family doctors.

During the school year of 1929, there was left to the family physician the giving of toxin-antitoxin, instead of this being done by the Department of Health. In 1928, the Department of Health had given 50,901 children toxin-antitoxin treatment, but the response on the part of physicians in 1929 was a great disappointment to us. During the month of January when replies to our questionnaire first began to come in, responses were received from 1,903 doctors who had immunized approximately 15,200 patients. During February the number was markedly reduced, and in April it had dropped down to one; so that we are forced to the conclusion that the family physician or the general practitioner does not appreciate the necessity for doing preventive work in diphtheria.

We believe that a large number of the preventive treatments given was the result of our educational campaign among the families through the children, rather than the result of efforts made by the doctors, although we sent to each doctor in the city fifty blanks which they might send out to the families in their practice so they would obtain toxin-antitoxin treatment. However, as I say, the number of treatments dropped off very abruptly after the educational program had been curtailed.

Through our diagnostic service, the Chicago Department of Health has aided physicians in making laboratory examinations to the number of 160,000. Contagious disease cases cared for in the Municipal Contagious Disease Hospital numbered 4,235. The Municipal Contagious Disease Hospital is in charge of a Superintendent who is under the direction of the Department of Health. However, family physicians are invited to send their cases to this Hospital and take care of them there. It is rather strange to say that very, very few doctors of the City of Chicago take the opportunity of using the Contagious Disease Hospital for their own cases. They prefer to turn them over to the city to be cared for.

In our effort to establish a definite program of co-operation with physicians in the City of Chicago, it would seem that there is a decided lack of interest on their part in doing preventive medicine work, and consequently that the outstanding necessity both in the State and City

is that of interesting physicians more definitely in preventive medicine if they wish to retain its control. If the doctors of the state do not wish to do or will not take up preventive medicine, the point is being reached where the State and City will have to take it over, of necessity.

We hope that eventually a program may be outlined which will convince every doctor of the necessity of taking up with serious mind the matter of preventive medicine.

DISCUSSION

Dr. James H. Hutton, Chicago: Dr. Kegel has pointed out, I think, that the practice of medicine is a changing affair. Preventive medicine is the medicine of the future, if not of the present. Our future welfare depends very largely on whether we take advantage of that fact.

We have not sufficiently appreciated the importance of preventive medicine to the doctor. The advantage to the patient has been emphasized a good deal in public health publications and in the lay press. I do not think we need to go into that. The Chinese recognized that a long time before we did. The advantage of preventive medicine to the profession is a thing we have not grasped sufficiently. Its importance to the profession has two aspects, professional and economic. At this time we complain a good deal about the unfair competition to which we are subjected by universities, foundations and what not. However, they have undertaken but little in the practice of preventive medicine except in the way of inoculations and sanitation. When we turn our attention to the field of preventive medicine, the field of our usefulness is very much enlarged.

When we take up preventive medicine our field of usefulness lies with the entire population instead of merely with the sick.

The school program that Dr. Kegel mentioned is one of the most constructive things that has taken place in this whole country,—certainly the most important that has gone on in Chicago. Dr. Kegel talked to me about this thing several months before it went into effect, and it seemed to me the program was so large that even if part of it were successful we could point to it with a good deal of pride.

I hope that we can make that part of the program of the Chicago Medical Society, and try to see to it that our own members co-operate actively with Dr. Kegel in that matter. In inaugurating that thing Dr. Kegel got away from a criticism leveled against us,—that of being against things without offering anything in their stead. Dr. Kegel sized up every element that might enter into that program and gave every organization a duty.

Dr. Kegel turned over to the private physician the toxin-antitoxin campaign last winter. The doctors were so surprised at this spirit of co-operation from the Health Department that they did not take advantage sufficiently of the opportunity. We should attempt to

stir up our own members and ask them to take a renewed interest in that campaign to the extent that all children that should have this inoculation are attended to before it becomes necessary for the city or state to take it over for us.

Dr. Kegel has demonstrated that co-operation is all important to the Health Department as it is to the doctor. That importance to the practicing physician depends a good deal upon who happens to be the Health Commissioner. At this time we are very fortunate in having a practicing physician in the position of Health Commissioner. I think he has put the department on a basis it has never before enjoyed.

Dr. R. R. Ferguson, Chicago: I wish to take this opportunity to say a few words about some of the things which Dr. Kegel has brought up, and perhaps answer one or two of the things which I have intended many times to write or talk to him about. One is in regard to the T.-A. As Dr. Kegel has told you, the T.-A. was started in rather a bold way some months ago, and the newspapers were used for publicity purposes, so the people could become acquainted with the value of the T.-A.

Now, after this length of time, Dr. Kegel comes forward with figures showing that the first month or two after inauguration, some thousands of cases were inoculated, perhaps twelve, thirteen or fourteen thousand. The following month dropped to less than a few hundred and then to only one, and stating that if physicians do not take hold of this the Department will have to do it. I believe every physician in Chicago who is a practicing physician, particularly among children, is doing everything he can to inoculate all the children that come under his care. I am doing a great deal of children's work, and every case that comes under my care I try to sell them T.-A. It is no fault of mine if I do not sell all of them, because hundreds of them do not come to me. Whose duty is it to sell T.-A.? It is the work of the Health Department. They should not go ahead for two or three months, do a little publicity and then blame it on the doctors if all children are not T.-A. We T.-A. every one that comes to us. It is up to the Health Department to continue their publicity. I do not believe it is right to turn around and say, "If you gentlemen do not go ahead and do this, then we will have to do it." I say you get those children to us, and keep up your publicity, and we are trying to assist you in every way we can.

I just want to leave this one thought with Dr. Kegel, that it is up to the Health Department to continue their publicity for people, and we will inoculate every child that is sent to us;—do not turn the Department over to this work, until the physicians have had the opportunity of doing all the T.-A. they can along that line.

The people that cannot afford to pay, let the Health Department go ahead and do that, but all those that can afford to pay, it is up to the Health Department to continue their publicity until all the work is done.

The other point is in reference to the Contagious Disease Hospital. It is only about one hour from my place down to the contagious disease hospital. I can

not afford to go clear down there to take care of cases. I never want my cases to go down to the Contagious Hospital. They get along as well, or better, at home. If it is a case that can afford to be taken care of in the home, or the circumstances make it necessary to send them down there, I am perfectly willing to send them, but it is an impossibility for me to take care of that case when it takes me two hours to get down there and two hours to get back. I hope the time will come when we can have a contagious hospital where a doctor can take his cases in his own neighborhood. That is the solution to this problem,—get help from your County Commissioners, so you can have one of these hospitals on each side of the City where we can have access to them and we all will be glad to send cases in, saving the people in Chicago thousands of dollars a year.

It seems to me that the Medical Society can advocate the placing of other contagious hospitals in the City, accessible to physicians.

Dr. R. O. Stites. Industry: I came down here because I am very much interested in public health measures, and I will give the observations I have, from a real country practitioner's standpoint.

A few years ago the State Department of Health began to have better babies conferences at the County Fairs. I went on the floor of our Society against the measure, and so far our society as an organization has not taken any part in the work, not because it was wrong in spirit, but because it gave the mothers a degree of assurance they should not have, because the babies are graded like Boston Bull terriers instead of babies. For instance the two most scientific procedures known to scientific medicine all over the world, namely smallpox and diphtheria prevention are rated as one point each. As much would be taken off for a mole, I believe, as for not having each of these absolute scientific procedures. And smallpox prevention has been known for 130 years. I am bitter at that procedure, because eighteen months after a baby had taken first prize at the better babies conference, I saw it die with laryngeal diphtheria. The poor mother held her child's lifeless body to her bosom, and wailed: "All those nice doctors and nurses said, she was the most perfect baby, and to think it should come to this!"

Is not the future of babies to be considered as well as the present? Why are any prizes ever awarded, until a certificate from the family physician states that these two absolute scientific procedures have been done?

Eighty-five per cent. defects in the Chicago school children! What are the defects? How hurriedly were the examinations done? What can be done for the vast majority of these defects anyhow?

Would you not, as a practicing physician, be bitter against such hurried grading, if you had worked for months with x-rays, the best consultations you could obtain, to assure some one that their child's lung infection was negative, and to have a public health officer and a nurse say it was tuberculosis, by a ten minutes examination? That has been done at our normal school.

Is more attention paid to the weight, according to the height, than plain common sense in these examinations? I think so. The human being can not be graded by a foot rule and scale; that is a breeding question and not a physical defect, except in the poor and fat. Look at all of us in this room and think how absurd this method is.

The County Medical Society can remedy this, by working through the public health service, through a publicity bureau, I think, and get this public health measure over. We have established in our local Medical Society, a bureau for public information, for the benefit of public health, we have a doctor of our society write an article on some scientific subject and have it O. K'd by the committee appointed for such purposes and I believe if we stick to only established scientific facts, we will get somewhere.

Dr. Arnold H. Kegel, Chicago (closing the discussion): In response to Dr. Ferguson's discussion, I want to say that in the first place, newspaper publicity is worth practically nothing in obtaining toxin-antitoxin protection. You can get out all the articles in the newspapers they will take, and they will print just so much of it, and we get very little results.

It is direct advertising, you might say, direct publicity to the patient or to the family, that is necessary; therefore, we sent out notices to the doctors. We gave them the blanks which they could mail with their bills, etc., to the families urging them to obtain toxin-antitoxin protection. Less than one-third of the blanks we sent out to the physicians were sent out to the families in turn. That may be because we sent out many of the blanks to physicians who were not doing children's work.

The Department of Health issued in one batch alone very near 750,000 bulletins on diphtheria toxin-antitoxin protection. I would estimate we sent out a total of between 1,000,000 and 1,500,000 of diphtheria bulletins in the City of Chicago. In addition we distributed as much educational material through the schools, directly to the individual, as we possibly could. The fact of the matter is that in 1928, or rather the latter part of the year, we spent just as much money as we ever did before, if not a little bit more, in T.-A. protection. The year prior to that, with an expenditure of less money, we got fifty thousand children immunized. This year, with more money, we got only fifteen thousand children in Chicago immunized; that is all of which we have a record. So the matter sifts down to an economic basis. We are really short 25,000 children that would have been immunized under ordinary circumstances and are way short of the number that should have been immunized, considering the amount of money expended.

The Department of Health will continue this individual publicity to the families, the children, the doctors, and we are going to try to co-operate further in the hope that in some way a routine will be established whereby doctors will help by keeping after their families. A haphazard scattering of bulletins and of newspaper articles achieves practically no results what-

soever. The campaign must be directed to individuals. Give the children a slip to take home to the parents in order to get permission to give the children T.-A. It is a matter of concentration. Every one wants to put things off, and unless the doctor concentrates on the individual child, we shall never get anywhere.

I believe a good many of the doctors, as you were saying, are still feeling that this kind of advertising is unethical. Being public health-minded, I can not see it. I can not see that they are unethical in protecting children against diphtheria.

OCULO-GLANDULAR FORM OF TULAREMIA*

DERRICK T. VAIL, JR., M. D.,
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The disease known as tularemia needs no introduction to you. It has occupied a great deal of attention in the literature during the past four years especially. To the wide-spread knowledge concerning the disease, great credit is due to Edward Francis, Surgeon of the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C. The general phase of this subject is beyond the scope of the present paper, since we are mostly concerned with the ocular type. There are certain features of the early history, however, which should be accentuated since the *credit for the discovery of the human type of the infection is entirely due to Ophthalmology.*

History. In 1908, Wm. B. Wherry,¹ a bacteriologist, was assigned to the Port of San Francisco to investigate plague among the ground squirrels.

In 1910, George W. McCoy² connected with the U. S. Public Health Service found that he was unable to isolate the *Bacillus pestis* from a certain number of infected squirrels brought to his laboratory, although the pathology of the diseased squirrels was identical with bubonic plague. There was a laboratory rule that all cases of plague must have a positive culture before a definite diagnosis was made.

In 1911, McCoy and Chapin, working on this plague-like disease in the ground squirrel, identified an organism almost through chance, which they named *Bacillus tularense* after the county of Tulare in California, in which the disease was first observed. In attempting to isolate this or-

ganism they used every possible culture media which they knew.

They had on hand some culture tubes containing egg yolk media for the isolation of the tubercle bacillus. As a last resort they inoculated these with infected material and much to their satisfaction they found that the organism (*B. tularense*) would grow. They also discovered that certain animals, especially rodents, were highly susceptible to inoculation by the organism, producing the same type of disease which they observed among the ground squirrels. At that time they prophesied as follows:

"We do not know whether the organism causing this disease is pathogenic for man, but judging from the large number of species that are susceptible, we are inclined to suspect that man might contract the infection."

In 1912, they³ worked out an agglutination test which has been extremely useful in proving the presence of this disease. At that time the discovery of the organism did not create any particular general interest. *In the fall of 1913, however, a patient consulted my father for a very severe and unusual conjunctivitis of his left eye.* Dr. D. T. Vail, Sr.,⁴ recognizing that this was something he had neither seen nor read about, sent the patient to Dr. Wherry, who was then Professor of Bacteriology at the University of Cincinnati, for a bacteriological examination. Wherry and Lamb⁵ worked on this case for several months, exhausting every possible method of cultivation, but keeping the disease going through laboratory animals. Wherry had been familiar with McCoy and Chapin's discovery, although it did not occur to him until several weeks had passed, that this was a human case of the disease which had been described among the ground squirrels. When he did think about this condition, the clinical problem was solved immediately, and he succeeded in isolating *Bacillus tularense* in pure culture. Among other experiments, he dropped an emulsion from a culture into the healthy eye of a guinea pig and reproduced the conjunctival disease, with death of the guinea pig in four days.

This is an extremely important observation since it indicates that the conjunctiva does not need to be traumatized for the organism to penetrate, and accounts for the extreme ease with which conjunctivitis tularense is caught.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, Illinois, May 22, 1929.

In 1914, Wherry and Lamb⁷ found two rabbits in Indiana to be infected with this disease and appealed to physicians to be on the look-out for a condition of this sort, and send in material from obscure cases. Their appeal was unheeded and it was not until much later that the general profession became interested in tularemia.

In 1907, Ancil Martin¹⁰ of Phoenix, Ariz., (Ophthalmologist) in a letter to Prof. Novy of the University of Michigan, described three cases of conjunctivitis which he had seen in his practice, and to which he gave the name of rabbit septicemia. One of these cases has since been proven by agglutination (1925) to be tularemia. The letter however, was pigeon-holed and nothing further came of it, until after Francis' work in 1919.

Pearse²⁵ in 1911, in Utah, under the title of "Insect Bites," described six human cases of the disease at that time known as deer-fly fever.

Francis in 1919 and 1920 investigated deer-fly fever, recognizing the identity of this disease, and named it tularemia. He isolated the organism and with Mayne demonstrated the agency of the deer-fly in transmission.

Parker and Spencer in Montana reported, in 1924, the agency of ticks in the maintenance and transmission of the infection. They demonstrated hereditary transmission through the egg of ticks.

O'Hara, in 1925, described a disease in Japan, contracted from dressing wild hares. This was proven by Francis and Moore²⁴ to be tularemia.

In 1928, certain Russian authors²⁶ reported a series of 105 cases of a plague-like disease occurring in the Ural Valley, Russia, in people who had been hunting and skinning water rats (vole). In this series two cases were found to be of the oculo-glandular type. They suspected that this disease was tularemia and are sending material to the U. S. Public Health Service for confirmation.

Prof. Zarhi of Sverdlovsk (Ekaterinburg) in the Province of Perm, Russia, sent material from a human case to Dr. McCoy, which the latter proved to be tularemia.

The distribution of tularemia therefore is wide-spread throughout the U. S., has been found in Japan and now in Russia.

At the risk of being called chauvinistic I should like to point with pride to the part Cin-

cinnati played in the discovery of this peculiar disease. The first human case was discovered in Cincinnati and proved by the Bacteriological department of the University of Cincinnati. The first three cases were described by Cincinnati Ophthalmologists, Vail,⁴ Sattler,⁶ Lamb;⁸ and Francis obtained his medical training in Cincinnati. So far as I know, it is the only wide-spread disease affecting the human body, which has been discovered primarily through the agency of Ophthalmology.

Those who are further interested in the general features of this subject, are referred to a recent paper by Edward Francis, entitled "Summary of Present Knowledge of Tularemia," Medicine. Vol. 7, No. 4, December, 1928; and also to "Tularemia," by Walter Simpson, Annals of Internal Medicine, Vol. 1, pg. 1007; June, 1928.

SUMMARY OF THE OPHTHALMIC CASES

Through the courtesy of Dr. Edward Francis, I was supplied with the names and references of those observers throughout the country who had reported proven cases of tularemia conjunctivitis. The following is a summary of the important features of these cases.

There are thirty-four undoubted cases of tularemia conjunctivitis and one doubtful case (that of A. C. Barry. This patient had general tularemia but the conjunctivitis was mild, bilateral and cleared up quickly with 10% argyrol).

Eye affected:

O. D.....	11	O. S.....	19	O. U.....	4
Age: Youngest, 7; oldest, 72; males, 30; females, 4.					

Locality: Throughout the U. S.—8 cases from Montana, 3 from Wyoming.

Occupation:

*Farmers	24	Rancher	1
Meat cutter.....	1	Bookkeeper	1
Cook	1	Laborer	1
Students	2	Unspecified	2
Sheepman	1		

*This includes wives and children.

SOURCE OF INFECTION

Handling or skinning rabbits (wild or jack).....	23
Crushing tick	8
Portion of crushed fly.....	1
No animal history.....	2

Those who handled ticks, generally crushed them between their fingers, the infected juice flying into the eye.

One patient had the habit of rubbing an eye which had a congenital stenosis of the lacrimal duct. This she did while cleaning infected rabbits, introducing the virus into that eye.

One farmer, while removing ticks from a horse, had a foreign body strike his eye and rubbed it with infected fingers.

One farmer while cleaning rabbits, was struck in the eye by a flying piece of rabbit meat.

Two patients were bitten on the cheek, one by a

fly, the other by a tick and each slapped at the insect, crushing it. The infected material entered the eye.

Those who handled infected rabbits undoubtedly introduced the infective material into the eye by their fingers.

Lesions:

Small yellow ulcers.....	17	Iritis	2
Papules or nodules.....	3	Corneal involvement with	
Boggy or thickened conjunctiva	5	perforation	*1
		*Magath and Yater. ¹⁸	

All but three mentioned intense swelling of the lid; thick, edematous and redundant conjunctivae.

Size of ulcers: Varied from 2 mm. to 6.0 mm.

Number of ulcers: From 1 to 10, average number 6.

Situation of Lesions:

More on the lower lid conjunctiva, usually in the tarsal area.

Three cases showed lesions on the bulbar conjunctiva. (Vail, Jr., Clark²¹ Pfunder.)

One case (Junkin²⁰) had a papular rash on head and shoulders, on the 14th day of the disease; one papule at the inner canthus causing intense edema of the lids.

Glandular Involvement:

Preauricular	22	Parotid	16
Cervical	15	Submaxillary	25
Many of these suppurated and had to be incized.			

Three observers reported that the glandular involvement appeared one, three and four days, respectively, after the eye symptoms. The rest showed simultaneous glandular involvement.

General Reaction and Duration of the Ocular Symptoms:

All but two had a general reaction with high temperature 103° to 104° F.

One patient was able to continue his work after a few days.

One patient had no elevation of temperature at any time (Jackson).

The febrile reaction lasted from one to six weeks, the average four weeks.

The temperature was of the typhoid type.

The conjunctivitis lasted from ten days to two months, the average four weeks.

The majority were incapacitated for from five to six months.

Type of Discharge (where mentioned):

Slight mucoid, or mucowatery	9	Profuse (type not mentioned)	1
Purulent	2	None	1
Muco-purulent	4		

All cases except one were proved by guinea pig inoculation or agglutination, one (Martin) 18 years later.

The one unproved case which is included, is that reported under "Parinaud's Conjunctivitis," by T. E. Fuller²². This case is so typical from the history of infection by a crushed tick to its clinical signs of incubation period, high fever, conjunctival ulcers and glandular involvement, that there is no doubt in my mind that this is a true case.

DESCRIPTION OF THE TYPICAL OCULO-GLANDULAR FORM

After a prodromal period, anywhere from 24 hours to 10 days (the average being 3½ days), the eyelids begin to swell and itch, and at the same time there is severe headache, vomiting, chills and fever. The onset is very sudden; and almost simultaneous with the swelling and edema of the lids, the glands of the head and neck on the affected side, namely: the preauricular, parotid, submaxillary and cervical, become enormously swollen and tender. If the patient is seen shortly after the acute onset, the ophthalmologist will find scattered throughout the everted lid conjunctivae, small yellow discrete ulcers, deeply situated in the chemotic conjunctiva, which is of a vivid scarlet color. Dr. Vail, Sr.,⁴ has picturesquely said, "they look like yellow polka dots in a piece of turkey red calico." As a general rule the cornea is not involved and the bulbar conjunctiva is not invaded. In two cases however, single ulcers have been described in the bulbar conjunctiva and in one case there were nodules. There is a scanty muco-watery discharge, generally straw colored, which is sufficient to glue the lashes together. The patient is obviously ill and complains of pain in the eye. As the course of the disease progresses, the ulcers tend to become nodular and covered over by a thin membrane. This may be found any time after the 17th day of the disease. The active conjunctivitis continues for about five weeks, when the swelling gradually recedes and the nodules disappear without leaving any scar. Several months later one can often find a thickened and congested conjunctiva in the retrotarsal folds. The glands on the other hand, persist for many months and may go on to suppuration. The patient is usually incapacitated for six months or longer.

Smears and cultures of the conjunctival sac, taken any time during the course, are always reported negative except for a few secondary invaders, such as the Xerosis bacillus, staphylococcus or streptococci. One can not succeed in growing the culture on egg yolk media by direct inoculation. After an emulsion is made from the conjunctival scrapings and injected into the peritoneum of a guinea pig, the guinea pig will die within five to seven days, from septicemia. Autopsy reveals the presence of

minute yellow dots scattered throughout the liver and spleen. The lymph nodes are enlarged and hard. Cultures taken from the spleen or liver foci will readily grow on egg yolk media.

There has been a mortality of 24 cases out of 654 reported cases of all types. *Three of the thirty-four eye cases have resulted in death.*

BACTERIOLOGY

(From Francis' "Summary of Present Knowledge of Tularemia."²⁷)

Bacterium tularense is a small, pleomorphic organism, Gram-negative, non-motile and non-spore-bearing. It grows only under aerobic conditions. Its optimum temperature is 37° C., and its optimum pH range is between 6.8 and 7.3. It ferments glucose, levulose, mannose and glycerin, forming acid but not gas. It grows well on coagulated egg yolk and blood-glucose-cystine-agar, but not on ordinary laboratory media such as plain agar, plain bouillon, gelatin, potato and milk. Bacillary, coccoidal and bipolar forms are noted. In smears, it stains well with crystal violet or aniline gentian violet, and in sections it stains best with Giemsa solution. In three of eight attempts it passed through Berkfeld filters which held back a small staphylococcus.

Heat. A temperature of 56° to 58° C. kills the organism in cultures and in spleen tissue in 10 minutes. Thorough cooking renders infected tissue harmless.

Formalin. Cultures suspended in saline solution containing 0.1 per cent of formalin (37 per cent strength) are rendered non-virulent after 24 hours.

Trikresol. Spleen tissue, rubbed up in 1 per cent trikresol, was free from infection after 2 minutes.

Glycerin. Pure undiluted glycerin into which cultures or spleen tissue are placed preserves the virulence 1 month at room temperature, 6 months at 10° C., and 1 year at -14° C. Glycerination in conjunction with annual or semi-annual animal passage serves to perpetuate the virulence of a strain for years.

Freezing. Spleen tissue frozen at -14° C. loses its virulence in 1 month. Frozen rabbits are infective for 3, but not for 4 weeks.

Drying. The virus resisted drying in bedbug feces for 26 days.

AGGLUTINATION

(From Francis' "Summary of Present Knowledge of Tularemia.")

1. "There was a complete absence of agglutinins for tularense in the first week of illness.

2. Specific agglutinins were always present at some time in the second week.

3. There was an abrupt rise in the agglutination titre in the third week.

4. A fall of titre began in the eighth week.

5. A gradual diminution in the amount of agglutinin took place until at the end of the first year, the average titre of 21 cases was 1:140.

6. Specific agglutinins remained for years in blood of long recovered cases and did not disappear from any

case, even 10, 11, 12, 15, 18, 19 or 24 years after recovery.

SUSCEPTIBILITY²⁷

(1) High susceptibility in man, monkey, ground squirrel, rabbit, guinea pig, mice, woodchuck, opossum, young coyotes, pocket gopher, porcupine and chipmunk.

(2) Slight susceptibility in rats, cats, sheep and goats.

(3) Non-susceptibility in horse, cattle, hog, dog, fox, chicken and pigeon.

TRANSMISSION AMONG ANIMALS²⁷

Blood sucking insects, lice, flies and ticks, are believed to transmit the infection from rabbit to rabbit in nature, thus contributing to the maintenance of infection throughout all the months of the year and perennially.

SEASONAL INCIDENCE²⁷

Ticks (March to August) and flies (June to September) have a seasonal prevalence and rabbits are protected by law, save in certain months (November to February).

OCULAR PATHOLOGY

There have been no histo-pathological studies of the conjunctival lesions made. Vail, Sr., says the solitary lymph nodes of the conjunctive are effected and the ulcers which extend through to the tarsus are punched out and filled with necrotic yellow plugs. Sattler excized a small nodule from the bulbar conjunctiva which appeared five weeks after onset of the conjunctivitis, with immediate exacerbation of the local and general condition, lasting two weeks. Histological examination showed a granuloma, but no giant cells and portions of this node did not produce the disease on injection into a guinea pig. In one case conjunctival scrapings taken on the 21st day did not produce the disease in a guinea pig. (Vail, Jr.¹¹). The general pathology need not concern us here. It has been well gone into (Wooley, Simpson) and described. There are briefly, areas of focal necrosis scattered throughout spleen, liver and lymph nodes.

DIAGNOSIS

1. Parinaud's Conjunctivitis.

This disease might be called the "bête noire" of ophthalmology. A study of the literature reveals innumerable cases, few of which can be definitely grouped. It appears that any kind of unilateral conjunctivitis with regional lymph adenitis has been called "Parinaud's" by the observer, and in the majority of cases, little or no attempt was made to run the etiological factor to earth, especially by the American authors.

Perhaps it would not be out of place to return to Parinaud's original description (Morax—French Encyclopedia, Vol. V., page 774).

"The affection is ordinarily monocular. It resembles at first glance a granular conjunctivitis. The conjunctiva is the seat of red or yellow vegetations, semi-transparent at the beginning, opaque at a later stage, which can reach the size of a large pin head. Alongside of these fleshy granulations, one finds very minute ones entirely yellow, which at first made me think of tuberculosis of the conjunctiva. In one case these

granulations were limited to the tarsal conjunctiva of the upper lid. In two other cases they occupied the two lids, the cul-de-sac and a part of the bulbar conjunctiva. The cornea does not appear to have any tendency to be involved.

There is a mucous secretion with very dense fibrinous deposits but no actual suppuration.

The lids are swollen, firm to the touch, with nodules which makes one think of chalazia.

The parotid region becomes very rapidly the seat of an inflammatory swelling which can extend to the neck and in the midst of which one discovers swollen and sometimes softened glands.

There is fever with irregular chills. It can persist for a very long time, but always remains moderate and does not gravely react on the general state.

The swelling of the parotid diminishes towards the fifth week but the glandular enlargement persists. Some disappear by absorption, others suppurate. The evolution of the abscesses is very slow."

For convenience therefore, one can follow the outline suggested by S. Gifford³⁷ and submit the following groups:

A. *Leptothrix conjunctivitis* (Verhoeff). In 1913 Verhoeff³⁵ discovered a leptothrix in a case clinically diagnosed as Parinaud's. Since then he analyzed 18 cases in his experience, in 17 of which he found the leptothrix.¹⁰ Of all the clinical forms this comes most near to Parinaud's original description. Verhoeff's description follows:

"Parinaud's conjunctivitis, or leptothricosis conjunctivae, is a subacute inflammatory condition of the conjunctiva due to infection with a minute leptothrix, and is always associated with inflammatory enlargement of the preauricular or other regional lymph glands. The source of the infection is unknown. In some cases there is a history of slight trauma to the conjunctiva preceding the infection. The incubation period is from three to seven days. The glandular enlargement is synchronous with the onset of the ocular symptoms. The essential conjunctival lesions consist of focal areas situated immediately beneath the epithelium, infiltrated with endothelial phagocytes in various stages of necrosis. Clinically these foci appear as opaque greyish areas from about $\frac{1}{2}$ mm. to 4 mm. in diameter. In individual cases they may be single or multiple, and may occur in any part of the conjunctiva including the bulbar portion. They contain the leptothrices in great numbers. Beneath these areas more or less granulation tissue is produced which may cause the conjunctiva to project in the form of polypoid nodules. The latter occur chiefly on the fornices. Ulceration seldom if ever occurs. In the affected regions, the conjunctival tissue is congested, edematous and densely infiltrated with chronic inflammatory cells, among which plasma cells largely predominate. In marked cases this causes the fornix to become everted and to project like a curtain over the cornea. Frequently the normal conjunctival lymph follicles are greatly enlarged. The congestion and edema extend through the whole of the lids so that in severe cases ptosis may result. The conjunc-

tival secretion is slight in amount and mucopurulent in character. The cornea is unaffected. The local subjective symptoms are not severe, and constitutional symptoms are slight or entirely wanting. The affected glands seldom break down.

The disease is almost if not always unilateral, attacks almost exclusively children and young adults, and males more frequently than females. It is most prevalent in winter, and so far as known, is never transmitted from one individual to another. The most efficient treatment is excision of the grey areas and nodules. The duration of the eye symptoms after this treatment is from one to five weeks. The glandular enlargement may persist for a considerably longer period."

Leptothrix has been found in similar cases by Keiper, LeMoine, Dunphy, Dean, Wherry and Ray, and Gifford. This pretty well establishes the unity of this disease and because of its marked resemblance to Parinaud's original description, deserves first place. Gifford, S. R.,^{37,38} in describing three cases mentions eosinophilia and believes this may play some part in the differentiation of this disease.

B. *Tuberculosis of the Conjunctiva*. Several cases have been reported, the clinical signs of which closely simulate Tularemia except in its most typical form^{38,39}. The chief point in differentiation lies in the gradual onset in tuberculosis. This sign however, is not necessarily to be trusted and laboratory tests, such as will be outlined below should be carried out.

C. *Syphilis of the Conjunctiva*. Here there is always an induration so well marked that one would not confound the soft vegetations of Parinaud's or the nodular swellings of Tularemia with the indurated surface in syphilis. The erosive surface of the chancre is usually covered over by a pseudo-membraneous exudate.

2. *Severe Conjunctivitis Caused by a Small Gram-negative Bacillus*.

This group so closely resembles Tularensis conjunctivitis that it might be identical.

A. *Necrotic Infectious Conjunctivitis*. (Pascheff.) In 1914 Prof. Pascheff⁴² of Sofia described three cases of a peculiar conjunctivitis, which he studied carefully. The disease began with malaise, loss of appetite and increase in temperature. Only one eye was affected. The preauricular and submaxillary lymph glands were enlarged on the affected side. Locally, the condition began with itching and redness of the lids. The lid borders became thickened. Moderate photophobia and lachrimation. The tarsal conjunctiva and conjunctiva of fornix somewhat were thickened by infiltration, but were smooth. Minute points and spots, which varied in size, were seen in the conjunctiva, especially of the tarsus and fornix. The spots had ill defined edges, entirely superficial, and when their surface was rubbed, some necrotic tissue was scraped away and left a shallow superficial ulcer, which healed without a scar. The disease has three stages, 1. Formation of conjunctival necrotic areas, 2. Stage of ulceration, 3. Stage of repair. Conjunctival process covers between 2-3 weeks. The involvement of the lymph glands lasts longer than

the conjunctivitis, and the skin covering them is red and painful to the touch.

Material injected intraperitoneally into a guinea pig resulted in the pig's death in 7-8 days. The spleen showed small white areas." (Abstract from Ophth. Year Book XVI, 1920, pp. 68.)

The organism named *Micrococcus polymorphus necroticans* is Gram-negative, grows well on ordinary media and differs in other cultural characteristics from the *Tularensis* bacillus.

In my opinion, however, its claim as a separate disease entity rests mainly on the fact that pure cultures are said to cause the disease on inoculation into guinea pigs. Prof. Pascheff however, has not sent blood specimens from his patients to Francis as the latter requested, so that agglutination tests with *B. tularensis* might be carried out.

Except for Pascheff's cases, no other case reports on this disease have reached my attention. H. H. Stark⁴⁶ of Texas reported four cases of conjunctivitis, which he arbitrarily called Pascheff's disease. Except for smears and cultures which were negative, there were no laboratory studies made and his paper is consequently of no importance. So far as the clinical descriptions go, his cases could have been, and probably were, *Tularemia*.

B. Conjunctivitis Pseudotubercle Rodentium. In 1919 Bayer and Von Herrenschwand⁴⁷ found in two cases of conjunctivitis, numerous small nodules which either went on to ulceration or absorbed without scars. The preauricular and cervical glands of the same side were affected. The cause was a variety of the *Bacillus pseudotuberculosis rodentium*, an organism which closely resembles the *Bacillus tularensis*.

3. *Sporotrichosis.* Morax⁵⁰ in 1909 reported the first case of sporotrichosis of the conjunctiva. Gifford, H.,⁴⁰ reported the next case. Bedell⁵¹ the next and finally Wilder and McCullough⁵² in a classical paper published in 1914, described a case which showed small yellow ulcers on the conjunctiva and lymph adenopathy.

The description in Fuch's⁵⁴ Text-book of Ophthalmology, sums up our knowledge concerning this disease, as follows:

"This rare disease is caused by various species of sporotrichon and produces small, light yellow, soft nodules in the conjunctiva with points of ulceration and with purulent discharge. There is swelling of the neighboring lymph glands. Nodules also occur in the lid margin. The canaliculi may contain concretions enclosing the sporotrichon."

A culture on any of the usual media is so characteristic that it cannot be mistaken for anything else. It develops in from 3 to 10 days.

4. *Agricultural Conjunctivitis.* Patten and Gifford⁵⁵ in 1921 described a severe monocular conjunctivitis with regional lymph gland involvement, the chief characteristics of which are, 1. very pronounced swelling and redness of the lids, 2. involvement of the regional lymph nodes, 3. presence of more or less extensive skin lesions, and 4, a dense and decidedly adherent false

membrane. The temperature may be 99.5 to 101 F. at the start, dropping to normal in a few days.

This disease should not be confused with *Tularemia* since no cases of the latter showed a false membrane at any time.

5. Other conjunctival diseases which might simulate *Tularemia*, are streptothrix and acute trachoma.

LABORATORY STUDIES TO BE CARRIED OUT IN A CASE OF PARINAUD'S SYNDROME.

Pascheff⁴⁴ in 1924 suggested the substitution of the term Parinaud's Syndrome in place of Parinaud's conjunctivitis, as signifying a unilateral conjunctivitis with regional lymph adenitis. This term has since been adopted by various authors, and should be more generally utilized.

All cases then, presenting a unilateral conjunctivitis with lymphadenopathy should be carefully studied, as follows, in order to discover the etiological factor:

1. *Smears and Cultures.* The cultures may show sporothrix. If egg yolk medium is used, inoculated under partial tension and anaerobic conditions carried out, one might succeed in growing leptothrix as Wherry and Ray have done. (J. Inf. Dis., 1918, xxii, pp. 554.)

2. *Conjunctival Scrapings Injected into a Guinea Pig.* This may reveal *Tularemia* in 6-7 days.

3. *Excision of Conjunctival Lesion.*

Half of which should be used for histopathological studies.

(a) This is of importance since so far there has been no description of the histology of an ocular lesion in *Tularemia*. (b) A section should be stained by Verhoeff's method (see Archives of Ophthalmology, Vol. 62, pp. 349) to demonstrate leptothrix. (c) A section might show typical tuberculosis foci.

The other half should be emulsified and injected intraperitoneally into a guinea pig. This is to demonstrate either *Tularemia*, tuberculosis or Pascheff's organism. It is possible that the new potato medium discovered by Corper and Uyei⁴⁴ can be utilized to grow the tubercle bacilli.

4. *Blood from the Patient.*

Enough should be taken (a) to perform a Wassermann test, and (b) to be sent to Dr. Edward Francis, the Hygienic Laboratory, 25 E. Street, Washington, D. C. for agglutination tests for *Tularemia*.

5. *Differential Blood Count for Eosinophilia.*

If the above studies are carefully carried out there will be few cases of Parinaud's syndrome, the etiological factor of which remains an unknown quantity.

Treatment of Ocular Tularemia. There is no specific treatment. A vaccine has been used in two cases (Lamb, Vail, Jr.) with marked febrile reaction resulting. Wherry suggests that this might be of value in diagnosis at least, acting very much like the Mallein test in glands. The therapeutic value of vaccines however, is doubtful. In spite of frequent instillations of mercurochrome for 24 hours in one case (Vail, Jr.) Wherry succeeded in killing a guinea pig with the bacillus obtained from a conjunctival scraping.

Argyrol, protargol, neo-silvol, boric acid solution

and the other usual collyria have been used without any specific action.

Perhaps the best local treatment, in view of our limited knowledge in this respect, is continuous hot applications of magnesium sulphate, sodium chloride solution and frequent lavage of the conjunctival sac with a mild antiseptic solution, such as boric acid, or sodium biborate, or even saline.

The general treatment should be supportive and the usual measures in a febrile disease carried out.

If the glands suppurate, they should be incised.

Acknowledgment. I wish to express here my thanks to Dr. Edward Francis, Dr. George McCoy and Dr. Walter Simpson for their kindness in supplying me with data and references. Also to the following, who not having reported their cases of ocular tularemia in the literature, kindly supplied me such information in a questionnaire:

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ACUTE FOOD SICKNESS

ACUTE FOOD INFECTIONS, INFESTATIONS, INTOXICATIONS AND POISONINGS*

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The question of definitions always occurs in dealing with the subject of acute illness resulting from the ingestion of food. This is on account of the uncertainty in regard to the nature of some of these maladies, and especially because of the confusion that has existed and still exists in reference to their etiology.

The term "ptomaine poisoning," under which many of these cases were classed two decades ago, has come into disfavor, and rightly so, because the newer research has demonstrated that the so-called "animal alkaloids" are rarely the true causative agents.

A recent classification of the abnormal conditions, brought about through the media of ingested foods, is that used by Damon¹ in his treatise on the subject, "Food Infections and Intoxications." Under food infections he classes paratyphoid from food, tuberculosis from milk and meat, undulant fever and septic sore throat from milk, and actinomycosis. Under infections as a sub-class, he includes the zoo-parasitic diseases acquired through food, such as trichinosis, taeniasis and other parasitic infections. Under food intoxications he includes botulism, mushroom poisoning, grain intoxication, milksickness, potato poisoning, fish and shellfish poisoning. The basis of his classification is that the transmission of infection is obligate by means of food. Although this classification is comprehensive and includes such diseases as tuberculosis, actinomycosis and taeniasis, in which the manifestations of diseases are not evident until the lapse of considerable time after the ingestion of the infected food, it does not include typhoid, cholera, dysen-

tery, and the diarrheas of infancy, where the effect is as immediate as in some of the diseases included in his category of food infections.

Jordan,² in a treatise on the same subject, applied the term food poisoning to a more comprehensive group of conditions. In addition to those included by Damon, his classification embraces the conditions resulting from the addition of inorganic and organic poisons to food, including various preservatives, coloring substances and food substitutes. This group of food infections is more comprehensive, in that it includes typhoid, cholera and all of the other well known food-borne infections. In a final chapter he includes the deficiency diseases, such as beri-beri, pellagra, scurvy and rachitis.

While it is true that these classifications embrace a large majority of the conditions in which food is a causative factor, it is also true that they include conditions which are not ordinarily thought of when speaking of food infections, intoxications or poisonings. In practice the sickness contracted through food constitutes a group of conditions where the effects of infection or poisoning manifest themselves quite acutely. In other words, this class is distinct in its etiologic and clinical aspects from the more chronic diseases such as tuberculosis, actinomycosis, rachitis and from the infectious diseases, such as typhoid, cholera or dysentery, even though these diseases are due to food infection.

A specific term should be adopted to cover this group of diseases. "Acute Food Sickness" would be an appropriate descriptive term. The acute sickness, contracted through food, may be divided into five sub-classes as follows:

First, the infections with the paratyphoid-enteritidis or allied groups of organisms.

Second, acute zoo-parasitic infestations, like trichinosis.

Third, bacterial intoxications, such as botulism.

Fourth, poisoning from inorganic or organic substances, including dyes and food preservatives, and poisonous compounds formed naturally in the food, as in the case of mushrooms and potatoes, or natural ingredients mixed with the foods, such as ergot or poisonous substances from other plants, such as white snakeroot in milksickness.

*Read before the Section on Public Health at Annual Meeting of Illinois Medical Society, Peoria, May 22, 1929.

1. Damon, Samuel R., Food Infections and Intoxications, Baltimore, 1928.

2. Jordan, Edwin O., Food Poisoning, Chicago, 1917.

Fifth, cases of unknown origin. A majority of the cases of acute illness from food fall in this class at the present time. The history of these cases usually indicates very definitely that a certain article of food is related to the condition; but chemically and bacteriologically no evidence of infection, infestation, intoxication or poisoning is found.

Cases Reported in Four Years. The manifestations of acute sickness from the ingestion of food are common occurrences, certainly much more common than the records of the health departments indicate. In many instances the exact causative agent cannot be determined, as is evident from the series of cases hereinafter reported that came to the attention of the Chicago Department of Health during the last four years. (See table at end of article.)

This shows that there were 133 occurrences, with a total of 851 cases during these four years. The cause was determined definitely by laboratory tests in only 22, or 16.5 per cent., of the total occurrences. In 13 of these, the cause was found to be a poisonous chemical, leaving only 9, or 6.8 per cent., of the total occurrences traced to food infection, infestation or intoxication.

The fact that laboratory examinations proved negative in 83.5 per cent. of the occurrences requires a word of explanation. In every case a thorough investigation was made by specially trained men of the department. A complete history was obtained and samples of all available suspected foods were collected; these samples were subjected to chemic, bacteriologic and serologic tests. In many instances feeding experiments were conducted. All the laboratory work was done under the supervision of Fred O. Tonney, Director of Laboratories of the Chicago Department of Health.

It has been the policy of the Chicago Department of Health to concentrate on the investigation of these cases and consequently the field and laboratory work has been well developed to cover all phases of the study of such outbreaks in a thorough manner.

One difficulty has not been overcome, and this is one of the reasons why such a large number of the investigations yielded negative results. This is the delay so often experienced in starting the inquiry, due to the fact that the cases were

not as promptly reported as the city ordinance requires. In many instances the first notice of the occurrence of cases was gleaned from newspaper accounts of the outbreaks; consequently, samples of foods actually consumed and suspected of being responsible for the particular outbreak, or samples of vomitus and of other specimens necessary to complete the inquiry could not be obtained at the time of the investigation.

Food Infections. Of the total of 851 cases of acute cases investigated, where food was suspected of being the media of transmission, 121, or 14 per cent., were found to be due to infection by the paratyphoid-enteritidis or allied group of organisms. The foods involved in these cases were:

Food	No. of Cases
Custard Cream Puffs.....	16
Crab Meat	105

The following two occurrences are typical examples of food infection found to be due to this kind of infection:

An Outbreak of Acute Food Sickness Due to the Ingestion of Custard in Cream Puffs: This occurred on June 28, 1928, and involved 16 persons. The onset occurred on an average of from 2½ to 3½ hours after ingestion of the food in question. In two cases symptoms occurred in from 10 to 15 minutes. All complained of vomiting, cramps, diarrhea, dizziness and cyanosis. Prostration was marked in most of the cases. No deaths occurred.

The cream puffs found responsible for this outbreak were prepared in a local bakery where bad sanitary conditions were found. The bins, troughs, tables and machinery were incrustated with dirt and dough. Thirteen of the persons taken sick bought the cream puffs from a store supplied by this bakery, and the other three bought them directly from the bakery. The cream puffs obtained from the store were from two lots that had become mixed, one of which had been delivered the day previous. No other food was eaten in common. In four cases, cream puffs were the only food consumed. Samples of cream puffs and all the ingredients entering into their manufacture were obtained and examined. Tests for poisons were negative. Feces and urine of the persons who prepared and handled the cream puffs were examined and found negative.

Bacteriologic examination showed the presence of an organism in the custard that corresponded

closely to Escherich's paragruehali. This is related to the *B. coli* group. Chemical examinations for poisons were negative. A sixty-hour physiological test for poisons on white mice was negative. Kreis' test for rancidity was positive.

In connection with the recurring outbreaks of food infection from custard in cream puffs and chocolate eclairs, four of such occurrences being brought to the attention of the department in 1928, with a total involvement of 58 persons, an intensive survey was made of the bakeries making such products, and samples of the fillings were taken and subjected to bacteriologic examination. In a series of samples from 28 bakeries investigated in the middle of December, it was found that the counts in the finished product on the day of manufacture ranged from 500 to 130,000, excluding one sample which showed a bacterial count of 3,200,000. The average count for the 28 samples taken from the freshly prepared product was 129,500; sixteen showed *B. coli* positive in one gram.

It was found that after these cream puffs had been kept in the bakery for 24 hours and re-examined that the bacterial count had risen tremendously, averaging 2,300,000 for the entire lot, and ranging from 9,000 to 7,000,000, and, in one instance, to 24,000,000.

It is also interesting to note that after the matter of preparing and handling the cream puffs had been investigated by the department the dangerous practices discovered and pointed out to the trade and a set of definite rules promulgated and enforced, great improvement resulted. No outbreaks of acute food sickness from cream puffs or chocolate eclairs have occurred since then.

An Outbreak Apparently Due to Infected Crab Meat: This occurred among 1,589 guests served at a convention banquet held at one of the large hotels in the city on September 13, 1926. The occurrence of cases of food sickness was not brought to the attention of the Department of Health until three days after the banquet. At the time only 155 diners remained in the city; of these, 105 stated that they had been made sick within four to twenty-four hours after partaking of the meal. They complained of nausea, diarrhea, dizziness and headache. All recovered within 48 hours.

An inspection showed that the kitchen was in good sanitary condition and that only the best

grades of food were served. Excreta examinations of the entire personnel of the hotel kitchen and dining room service proved negative.

The meal consisted of the usual articles of food served at banquets. It was found that of the 105 diners who became ill, 101 had eaten crab meat; 95, olives; 102, filet mignon; 97, mushrooms; 102, peas; 91, salad, and 90 ice-cream. Samples of only two of the articles of food suspected could be secured for examination, namely, the crab meat and mushrooms.

The results of the examination of the crab meat have been reported by Geiger, Greer and White.³ They found an organism which resembled culturally very closely the salmonella supestifer. It was not agglutinated by antisera from six known strains of *S. supestifer*, but was agglutinated by its own homologous serum in high dilutions. Injections of cultures, filtrates and washed organisms, grown in broth, resulted in the death of a high percentage of mice when 1 c.c. was injected. The heated filtrates did not cause the death of mice. Antisera from rabbits, injected intravenously at frequent intervals with sterile filtrates of organism found, failed to protect mice injected with unheated filtrates.

Zoo-parasitic Infestations: It is interesting to note that only six cases of trichinosis or other acute zoo-parasitic infestations were brought to the attention of the Health Department during the past four years. In 1923, six, and in 1924, fourteen cases of trichinosis in man, confirmed by laboratory examination, were reported.

Since October, 1924, an order has been enforced which prohibits the use of pork in sausage unless such sausage is heated to a penetration temperature of 137° F., or the pork is previously frozen for 21 days at a temperature of not higher than 5° F.

Bacterial Intoxications: Two occurrences of bacterial intoxication were noted during the last four years. In both instances botulism was found to be the cause. Each outbreak involved only two persons. The one occurring in 1925 was due to canned peas and resulted in the death of the two persons infected; the other was an attack of botulism that occurred recently affecting two brothers, one of whom died.

Botulism Due to Imported Canned Onions: This oc-

3. J. C. Geiger, Frank E. Greer and John L. White, Bacterial Flora of Ground Meats, American Journal of Public Health, May, 1928, p. 602.

currence followed the ingestion on January 23, 1929, of canned onions, so-called shallots, imported from Italy. Two brothers, M. and P., ate sandwiches at noon containing these shallots, prepared with olive oil, pepper and salt. Milk and cake were the only other foods eaten by the brothers at this meal; and no other members of the family ate the shallots. M. ate one sandwich, while P. partook of two or three.

It was reported by M. that the cans containing the shallots showed no signs of bulging, but that his wife had noticed, on removing them from the can, that they had a bad odor and did not look just right.

P. was taken sick just before he quit work on the same day. He vomited and complained of pain in his eyes and throat. On the following morning he was worse and complained of seeing double. On that afternoon he was seen by Dr. Amos De Feo, who sent him to a hospital that evening. The hospital reports that he was semi-comatose on arrival, but could be roused, had difficulty in speaking, and that a fruity odor was observed on his breath. His pupils were dilated and fixed. Fundus examination showed the disk pale, with a white center. Respiration was jerky; reflexes of abdomen, chest and heart were negative; temperature was subnormal (95 to 96). A paralysis of the throat muscles was noted, and there was a marked facial paralysis. Death occurred from respiratory paralysis on the evening of January 25.

M., the brother who ate only one sandwich, went to work the same as usual on the day following the noonday lunch, but did not feel just right and had eaten no breakfast; took a chew of tobacco and vomited soon after; had pains in the stomach during the afternoon and quit work. At home that evening, he suddenly developed chills and noticed that he was seeing double.

On the afternoon of January 26, he was found in bed with a bandage over his eyes. He complained of sore throat and had difficulty in swallowing; felt dizzy, and continued to see double. Conjunctiva was injected. Eyelids showed slight ptosis; pupils were widely dilated, but equal, and responded very slightly to light. Pulse, 100; temperature not taken. Patient seemed entirely rational and gave a clear account of his own and his brother's illness; stated that he felt all right, except for his eyes.

Polyvalent botulinus antitoxin, obtained from the University of Chicago, was administered by Dr. William E. Cary at 5 p. m. on January 26; a dose of 8,000 units was given, and this was repeated on the following day. On January 28 the diplopia disappeared, but the patient still complained of a slight haziness of vision in one eye. The dizziness disappeared after the administration of the antitoxin, and the general condition improved rapidly.

The empty can in which the shallots were contained was recovered and examined in the Health Department laboratory. Washings from the can showed the presence of *B. botulinus* type B. The toxin from this organism was found by animal test of cultures made from the kidney of the victim.

Food Poisoning. The majority of the cases of acute illness from the ingestion of food containing poisonous chemical substances are due to an accidental admixture of these ingredients. The most common source of the arsenic thus frequently found is the careless distribution of rodent poisons in places where food is stored or handled.

A new source of chemical contamination has been brought to the attention of the department several times during the past year, that is escaping gas from leaking pipes in domestic refrigerators. The department is now engaged in a comprehensive study of the effects of such contamination and of the measures necessary to prevent such occurrences.

Cases of Undetermined Origin. It is not claimed that the 111 occurrences and 652 cases of acute illness, apparently due to food, where the cause was not definitely determined by laboratory tests, listed in this report, constitute the only ones of this character that occurred in the city of Chicago within the last four years. Every general practitioner of medicine sees many occurrences of this kind. The symptoms in the milder cases are such that it is difficult to differentiate them from those resulting from functional disturbances of the gastro-intestinal tract due to dietary indiscretions.

Some of the limited or family occurrences of acute food sickness may be due to a single package of food that had been spoiled or contaminated before delivery to the consumer. Many others are due to spoilage resulting from careless handling, improper preservation, or inadequate refrigeration of foods in the home. Accidental contamination with rodent poisons should also be considered, or the possibility of a human carrier of the infection.

Diagnosis. In many occurrences, especially where only one or two persons are involved, a diagnosis of acute food sickness is hard to make, except in cases of botulism, where the symptoms are characteristic and the laboratory findings definite.

Poisoning by chemical substances must always be considered and can be ruled out definitely only by laboratory tests. The same is true of parasitic infestations. Cases found to be due either to poisons or to parasites are etiologically distinct and are classed under their specific

causes after a definite diagnosis has been made.

The bacterial food infections are the most difficult to diagnose. In the present stage of our

knowledge, the epidemiologic investigation must be relied upon, rather than the laboratory findings in determining the true nature of the cases

CASES OF ACUTE FOOD SICKNESS CHICAGO—1925

Date Investigated	Patients		Suspected Food	Analysis of Suspected Food		Probable Cause
	Adults	Children		Actually Consumed		
1/ 5	3	4	Coffee Cake	Yes		Coal gas
3/24	1	3	Canned vegetables and pie	Yes		
4/16	4	..	Roast veal	Yes		Coal gas
5/14	3	..	Club sandwich	Yes		
6/18	1	1	Cooked chicken	No		
6/24	*4	..	Pancakes	Yes		Arsenic intentionally added
7/10	†4	..	Beefsteak	Yes		Sodium fluoride in biscuit flour
7/20	1	..	Green olives	No		
7/22	‡2	..	Canned peas	Yes		B. Botulinus type B
9/ 1	11	..	Cake	Yes		
9/ 4	1	..	Malted milk	No		
10/29	3	5	Fruit salad and roast veal	Yes		
10/30	..	2	Canned beans	Yes		
12/15	..	1	Roast veal	Yes		
12/29	..	1	Milk	Yes		Colic
	38	17				
Grand total.....				55		
Summary				Occurrences	Cases	
B. intoxication				1	2	
Poisoning				2	8	
				3	10	

*Three fatalities.

†One fatality.

‡Two fatalities.

CASES OF ACUTE FOOD SICKNESS CHICAGO—1926

Date Investigated	Patients		Suspected Food	Analysis of Suspected Food		Probable Cause
	Adults	Children		Actually Consumed		
1/	2	1	Corned beef	Yes		Tests negative
1/ 4	2	..	Chop suey	No		
2/ 3	1	..	Salad dressing	Yes		Tests negative
7/ 1	2	..	Chocolate eclairs	Yes		Tests negative
7/16	7	..	Bottled water	Yes		Tests negative
8/ 2	1	..	Wine, sugar, salt, olive oil, cheese, vinegar	Yes		Tests negative
8/12	1	..	Ice cream cones	Yes		Tests negative
8/13	1	3	Indefinite	No		
8/27	..	2	Syrup, pears, banana	Yes		Tests negative
8/30	1	..	Clam chowder	Yes		Tests negative
9/23	105	..	Crabmeat	No		Organisms resembling B. subtilifer. Tests negative
9/30	2	1	Tomato soup; kidney beans	Yes		Tests negative
10/ 4	1	..	Mushrooms	Yes		
10/ 4	2	..	Mushrooms	Yes		Tests negative
10/13	1	3	Mushrooms	No		Fresh mushrooms
11/12	..	1	Licorice Whips	Yes		Tests negative
12/15	2	..	Candy	Yes		Tests negative
12/20	..	1	Candy	Yes		Maggots, wormy
12/21	4	..	Carbonated water	Yes		
12/24	2	5	Home-brew; mushrooms	Yes		
	137	17				
Grand total				154		
Summary				Occurrences	Cases	
Infection				1	105	
Infestation				1	1	
Poisoning				1	3	
				3	109	

and in differentiating them from gastro-intestinal disorders, or acute functional disturbances due to dietary indiscretions. Naturally, the epidemiologic data are of value only in determining the cause where a number of cases are involved.

In any mass infection there is always a certain proportion, often more than 75 to 90 per cent. of the exposures, that escape infection. The same proportion, applied to a small group, accounts for the development of symptoms in the isolated case while the others escape. Doubtless the lack of acidity of the gastric contents is a determining factor in the cases contracting the

infection. Such isolated cases are extremely difficult to recognize, unless the laboratory findings are positive.

CONCLUSIONS AND RECOMMENDATIONS

1. Acute sickness from food is comparatively common. During the past four years 133 occurrences, involving 851 persons, were reported to the Chicago Department of Health.

2. In a large percentage (83.5 per cent. in this series) a definite cause cannot be determined by laboratory tests.

3. The cases where the cause is definitely determined fall into four classes, namely, bacterial

CASES OF ACUTE FOOD SICKNESS CHICAGO—1927

Date Investigated	Patients		Suspected Food	Analysis of Suspected Food		Probable Cause
	Adults	Children		Actually Consumed		
1/ 4	1	..	Soda crackers	Yes		Rancid crackers, positive rancidity Wormy candy
1/ 4 (office)	..	1	Wormy candy	No		
1/13	25	..	Entire meal	No		
1/25	3	4	Corned beef	No		
1/25	4	3	Corned beef	No		
1/27	2	3	Hamburger steak	No		
3/ 5	3	..	Sandwich and gravy	No		
3/11	22	..	Hash (ham)	Yes		Excess nitrites
3/15	3	3	Cake	Yes		Tests negative
4/ 1	..	4	Cooked Farina and milk	Yes		Tests negative
4/16	2	..	Sugar	No		
4/24	4	..	Candy	No		
4/29	2	4	Ice cream cake	Yes		Illuminating gas
5/13	1	..	Creamed codfish	Yes		Tests negative
5/19	1	6	Flour and sugar	Yes		Tests negative
5/24	3	..	Sausage (Italian)	Yes		Trichinosis
5/26	3	..	Raw lean meat	No		Trichinosis
6/25	2	1	Apple pie	Yes		Stale pie
6/27	2	..	Bread (pink mould)	Yes		Mouldy bread
7/ 6	..	3	Ice cream	No		
7/ 8	3	1	Fish	Yes		
7/13	..	4	Cocanut cream pie	No		Stale cream pie
7/19	8	..	Indefinite	No		
8/ 8	2	2	Spareribs	Yes		
8/11	..	2	Candy and popcorn	Yes		Tests negative
8/17	3	..	Cooked steak	No		
8/18	2	..	Hamburger	No		
8/23	4	..	Roast beef	No		Excess sulphites
8/24	..	3	Chocolate eclairs	No		Stale eclairs
8/24	2	26	Raw milk	No		Raw milk served at summer camp
8/24	2	3	Chicken	Yes		
9/ 1	2	2	Fried steak, rice or flour gravy.	Yes		
9/ 2	2	1	Corned beef sandwiches	No		
9/22	6	3	Cake	No		
10/ 5	2	2	Cold pork sandwiches	Yes		
11/ 2	1	5	Canned corn	No		
11/11	2	..	Cake (Boston pie) custard cream filled	No		Stale mouldy cake
11/14	2	3	Canned plums	No		
11/16	2	4	Roast beef	No		
11/23	2	1	Fried oysters	No		
12/27	3	5	Bean soup	No		
Total	133	99				
			Grand total.....	232		
			Summary	Occurrences	Cases	
			Parasitic infestations....	3	7	
			Poisoning	3	27	
				6	34	

(See 1929 table on page 289)

infection, parasitic infestations, bacterial intoxications and chemical poisonings.

4. Without definite laboratory findings it is difficult to distinguish between isolated cases of acute food sickness and gastro-intestinal disorders or functional disturbances due to dietary

indiscretions.

5. Physicians and health departments should cooperate so that all cases of acute food sickness can be made the subject of prompt epidemiological and careful laboratory investigation. To this end all cases should be reported promptly.

CASES OF ACUTE FOOD SICKNESS CHICAGO—1928

Date Investigated	Patients		Suspected Food	Analysis of Suspected Food		Probable Cause
	Adults	Children		Actually Consumed		
1/23	8	..	Canned soup	Yes		Presence of emetic and purgative
1/24	1	..	Mushrooms	Yes		
2/3-5	19	..	Hollandaise sauce	Yes		Hollandaise sauce
2/9	1	..	Brussel sprouts	Yes		
2/17	2	..	Hamburger steak	Yes		B. coli present in all three samples
2/21	1	1	Chop suey	No		
3/3	1	1	Mutton soup	Yes		
3/12 (office)	1	..	Frankfurters	Yes		
3/13 (office)	1	..	Trichinosis suspect	Yes		Tests negative
3/20	..	1	Frankfurters	No		Acute nephritis
3/28	1	..	Canned salmon	Yes		Tests negative
3/30 (office)	1	..	Chop suey	Yes		Sample had glass
4/16 (office)	5	1	Pot roast	Yes		
4/16	1	..	Salmon	No		Organic heart disease
4/24	3	..	Flour	Yes		Tests for arsenic negative
4/26	2	..	Ketchup and sandwiches	Yes		Tests negative
5/15	2	2	Frankfurters	No		
6/5	4	..	Smoked ham	No		Decomposed meat
6/6	2	3	Candy	Yes		
6/21	2	2	Miscellaneous food	Yes		Arsenic poison
6/28	10	6	Chocolate eclairs	Yes		Tests positive, "Escherich's Paragruenthami a member of the coli group
7/2	2	4	Frankfurters	No		
7/5	1	..	Frankfurter sandwich	No		
7/9	1	..	Canned pea soup	No		
7/17	3	1	Tapioca pudding	Yes		
8/13	3	3	Ice cream cone	No		Chronic appendicitis
8/2	3	1	Mushrooms	Yes		Amanita muscaria
8/7	7	4	Veal	Yes		Gastro enteritis
8/13	3	3	Pot roast	Yes		
8/27	1	2	Chop suey	Yes		Chemical poison
8/30	3	..	Chicken salad sandwich	Yes		Tests negative
8/30	3	..	Chicken salad sandwich	No		
8/30	7	..	Chicken salad sandwich	No		
8/30	8	..	Chicken salad sandwich	No		
9/4	2	..	Roast rump beef	Yes		Excess sulphites
9/13	..	2	Frankfurters	No		
9/24	2	..	Chocolate eclairs	No		
10/2	5	..	Pickled beets and gravy	Yes		Chemical tests negative
10/9	1	..	Canned salmon	Yes		Chemical tests negative
10/18	165	..	Entire dinner	Yes		Chemical tests negative
11/15	15	14	Chocolate eclairs	Yes		Tests negative
11/17	1	..	Cake	Yes		Chemical tests negative
11/19	7	4	eclairs	Yes		
11/26	2	..	Chicken salad	No		
12/7	2	..	Canned peas	Yes		Chemical tests negative
	11	4				
	233	32				
	68	17				
	312	53				

Total	365	
Summary	Occurrences	Cases
Infection	1	16
Poisoning	6	22
Intoxication	1	4

Total 8 42

OBSCUR E EAR DISEASE IN THE FIRST YEAR OF LIFE*

M. H. COTTLE, M.D.

CHICAGO

In the first year of life the anatomy of the ear is different from that in the adult. The eustachian tube is shorter, wider and more open. The tympanic cavity contains myxomatous tissue in varying amounts and folds of mucous membrane divide the cavity into many smaller complete and incomplete cavities. The antrum is relatively large and the bone surrounding it is softer, diploetic, and thinner. The cortex over the antrum not infrequently contains cartilage remains.

The anterior and posterior walls of the external auditory canals are more approximated and the osseous portion of the canal, especially the superior wall, is not yet well developed. The drum membrane is thicker and more resistant and lies in a more horizontal plane. Therefore the superior boundary of the drum membrane lies definitely more lateral than the inferior boundary. The vascular supply is relatively more abundant and the lymphatic drainage from the middle ear and the antrum, is easier and greater. All these factors contribute to obscure a clinical aspect of pathologic processes which would be evident under similar conditions in the older child or adult.

For example, in an infant an infection of the middle ear does not immediately or necessarily mean the involvement of the whole mucous membrane. Because of the persistence of embryonic tissue in the cavity and the folds of succulent mucosa, which traverse it, the infection may be limited to a single division of the tympanic cavity, or, two or more small isolated areas may be infected with the intervening tissue relatively normal. In the case of the former, perhaps, the drum would appear just slightly reddened; the landmarks being practically normal. In the case of the latter, perhaps, just a fullness of the drum with suggestion of normal landmarks may be seen. In both these instances, however, the general tendency would be to treat very conservatively. Yet the thick-

ness of the drum prevents early spontaneous perforation and the infection continues to spread. The mucous membrane of the middle ear absorbs the products of infection very readily, and we have the clinical picture of an ill child with high temperature and other symptoms which might easily be mistaken for a non-otogenic disease. In a word, the appearance of the drum membrane is too frequently not an indication of the severity of the ear disease present.

When the infection spreads through the attic and involves the antrum, the middle ear infection may clear up; or, granulation tissue may form and practically separate the antrum from the middle ear. In both these instances, study of the drum membrane tells us again but little of the antrum pathology.

It is the contention of Dean, Alden, and others, that, in such instances, a sagging of the posterior superior quadrant of the drum membrane and the superior canal wall may be noted. Many observers have been unable to decide definitely that they can agree to the occurrence of this sagging.

Etiology. In infants certain etiological factors are also sometimes overlooked. Intracranial lesions and intestinal conditions which produce vomiting, are confused with diseases starting originally in the ear. Regurgitated particles of food and debris may become lodged in the middle ear because of the short open eustachian tube, and instigate inflammation; not only because of the bacteria they may contain but also because of their own presence which act as other foreign bodies would. In infancy, intracranial complications of ear disease are relatively rare. Whether ear infection per se can produce serious intestinal distress, is still a mooted question.

In anemic, rachitic and premature infants, a given infection would be likely to produce more serious symptoms. The type of organism producing an inflammation is also a determining factor of the clinical course.

From this hasty survey, it seems that for an exact estimation of a given clinical picture in an infant, the following must be insisted upon.

1. Ears should be examined repeatedly. These examinations should be done after a very careful cleansing of the ear canal. The speculum should be small enough and short enough to make vis-

*From the Oto-Laryngological Service of the Children's Memorial Hospital.

*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, May 22, 1929, Peoria.

ability of the superior portion of the drum easy. (It should be remembered that it was pointed out by Gomperz that the crying of an infant produces some redness of the drum.) I believe, with Alden and his co-workers, that the use of an electrically lighted otoscope is of great value. In addition to this the ear should be studied with a head mirror, using a hand lense of about 10 diopters to magnify the drum.

By paralletic displacement, small swellings and bulgings of the drum membrane can be observed.

2. The evaluation of the general condition of the child by the pediatrician is of paramount importance.

3. Careful laboratory work and x-ray study of chest, urinary tract and head in questionable cases is necessary.

4. In the treatment of the middle ear, incision of the drum membrane in general should be done when any doubt arises, rather than wait, and should be repeated without hesitancy if deemed advisable. (It must not be forgotten that it is possible for infection of the middle ear to drain through the eustachian tube after paracentesis, and even persist for years without any rupture of the drum membrane) and as the following cases illustrate in case of doubt it is advisable in urgent instances to open the mastoids early.

In all these cases there was found post mortem a bilateral suppurative mastoiditis and with only one exception there was definite bone destruction. In all the clinical diagnosis was not made even though the ears were studied.

Name	Age	Diagnosis	
		Clinical	Post-mortem
J.L.	3 mos.	Pyelitis Otitis media ?	Bilateral mastoid, kidneys and other organs normal.
R.M.L.	6 mos.	Pneumonia Otitis media ?	Bilateral mastoid, pneumonia
R. J.	8½ mos.	Chronic meningitis	Bilateral mastoid, meningitis
M.W.	8 mos	Meningitis Otitis media ?	Bilateral mastoid, meningitis
D.V.	5 wks.	Pneumonia Rt. otitis media	Rt. mastoid; no bone destruction; Pneumonia
B.T.	2½ mos.	Chronic meningitis. Ears red	Bilateral mastoid, Meningitis
J.G.	7 mos.	Bilateral otitis media	Bilateral mastoid
R.V.	3 mos.	Slight otitis media Broncho - pneumonia	Bilateral mastoid Broncho-pneumonia

Intestinal Intoxication. There were 53 children in this group. The clinical diagnosis of in-

toxication, gastro-enteritis, or malnutrition with diarrhea was made in each. In all, however, there were vomiting, frequent loose and watery stools, dehydration, and loss of weight. With only medical and dietary treatment 11 (eleven) were discharged from the hospital as improved, one was taken from the hospital against advice unimproved, and two improved following mastoidectomy and dietary correction. One had a mastoidectomy several weeks after recovery and showed extensive destruction of the bone. Thirty-eight died, of which twenty-two were examined post mortem. In only nine were head examinations allowed and of these six presented bilateral mastoid pus and marked bone destruction. One had bilateral mastoid pus without bone destruction, one had pus in the right antrum only, and one had no mastoid disease macroscopically.

Of the seven which had bilateral mastoiditis (fourteen drum membranes) two presented perforated drum membranes with purulent discharge; in two the short process was seen; five had slight redness of drum; four had dullness of the drums; one had sagging of the superior canal wall. There was tenderness over the antrum in three instances.

Among those that died were five which were submitted to a mastoid operation. The ten mastoids thus studied presented various degrees of pathological change ranging from a drop of pus to extensive bone destruction. From all there was isolated one of two organisms, namely *Pneumococcus*—or *streptococcus hemolyticus*. In four there appeared to be improvement the day following operation, after which the condition changed for the worse. In the other death occurred twenty-four hours after operation. No case was operated on early, i.e., in the first two weeks of the illness.

If one be allowed with such a small series to compute percentages, it is seen that in the non-operated there was 25 per cent. recoveries; in the operated ones 28.57 per cent. But it must be said that those operated upon were in extremely poor condition at the time of operation.

Comment. It is the impression of the writer that mastoid operation in the later phases of intestinal intoxication offers no more than non-surgical treatment. But it is felt that in view of the work of others who have reported better

results and because of our own experiences, a series should be studied where operation is done early.

DISCUSSION

Dr. George W. Boot, Chicago: It seems to me that Dr. Cottle has done a very useful piece of work in getting up these cases. From St. Louis we have had reports of favorable results that are better than we have been able to get. They must have a different type of infection, or we do not operate early enough.

I have here two temporal bones, one from an infant and one from an adult, in which you can see the vast difference. The new bone has no mastoid, no external auditory canal; the Eustachian tube is as large in the infant as in the adult. In addition the antrum in the adult lies posterior to the upper part of the external auditory canal; in the infant it is almost exactly above the external auditory canal. Incision of the drum membrane in these cases is practically harmless and I think should be done very much earlier in cases where we have diarrhea and symptoms of dehydration. An ether rauch will save the patient much discomfort. You can do a paracentesis without any danger. A mastoid can be done very nicely under local anesthesia. This is the age when Wilde's incision gives results. Practically the whole operation can be done with a scalpel.

If this paper is the means of calling attention to careful examination of these babies and early operation, either incision of the drum or mastoid, much earlier, I think it will do a great deal of good.

Dr. Thomas C. Galloway, Evanston: This is a very interesting subject and I like very much the conservative way in which Dr. Cottle handled it. I have done about ten in a series of cases with about the same conclusions that Dr. Cottle had, infants in a children's institution in Evanston; purely intestinal infections, and in most instances *B. coli* found in the mastoid at autopsy. I did not feel that any of these cases were affected by operation. The epidemic was controlled by typhoid technique, and that class, in spite of the pathological findings, could not be helped by operation.

In another series I operated late and got no bad results, but felt that if they had been operated on earlier the results would have been somewhat different. I do not share the enthusiasm for almost wholesale operations in these children with these symptoms. I think Dr. Cottle is to be congratulated on his careful work, and the attempt to evaluate this technique for what it is worth.

Dr. George Woodruff, Joliet: I have just taken care of two four months old babies who presented this symptom, who were under the care of a pediatrician also, and I think only his prompt and energetic treatment saved the second baby. They were twins, and the parents had just moved from California. I opened the first baby's eardrum the first evening I was called, and the child did pretty well. Three days later the other was sick; when I was called another pediatrician had seen the baby and opened the ear. The child was very much dehydrated. I cleaned out the ears and

in so doing found a paracentesis had been done, but was blocked up by dried up secretion. I feel such cases are typical of this syndrome.

Dr. C. Hopkins Long, Chicago: The only statement I wish to make on this paper is to emphasize the importance of early mastoid operation.

Dr. Willard Brode, Chicago: With regard to this question of perforations, I have had a number of these infants with the symptoms just quoted, and I find the essential thing is proper ventilation in the nose by way of using combinations of ephedrin sulphate 2% and 37 equal parts: dropping five or six drops in each nostril three or four times a day, I also use two or three drops of the same combination in the ear canals after removing the secretions that may be serving as an obstruction to drainage and ventilation.

This procedure opens up the infected areas and sterilizes them and thus prevents the middle ear from becoming reinfected. In my opinion thorough drainage and non-irritating germicidal remedies will accomplish more than any other plan of treatment, and ward off a complicating mastoiditis.

Dr. M. H. Cottle, Chicago (closing): It has been interesting that in a survey I made of about twenty-five or thirty pediatricians in Chicago, very few had had these gastro-intestinal cases in their private practice die. However, as handling children producing reinfection, I think we can eliminate that, because so many children become ill and die within forty-eight hours. There are many etiologic features to be considered. Many children have a tendency to vomit from birth on, and chronic vomiting at six or seven weeks leads one to consider pyloric stenosis or spasm. We at first thought the creamy discharge was pus coming through the drum membrane, but the microscope revealed epithelial debris. This moisture has been seen where there is normal eardrum and two or three days later the eardrum presents a pathological appearance. In one case which presented a sagging of the posterior portion of the drum membrane, the pediatrician asked me to do an operation on the right mastoid, and we found in this seven months child an enormous necrotic mastoid with exposed dura. We operated on the left mastoid which showed almost normal drum membrane. There was an extensive destruction of the mastoid region.

METHYL ALCOHOL POISONING*

(A Clinical and Pathological Study of 11 Fatal Cases)

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Prohibition has painted many lurid scenes upon the Canopy of Time. Legislative enactment changed men's rights but not their appe-

*Read before the Joint Meeting of the Sections on Medicine and Surgery, Illinois State Medical Society, Peoria, May 22, 1929.

tites. In this region illicit liquor flowed freely. The grip of the Law was tightened. Demand exceeded supply. Every source of intoxicating liquor was tapped. A drum of methyl alcohol disappeared. Scores of drinkers became sick and blind. Then the Grim Reaper took his toll and eleven husky men fell before his onslaught in this city in four days, and many others in the outlying villages and hamlets.

Methyl alcohol is produced by destructive distillation of hard wood or peat. The crude product is refined producing a colorless, mobile liquid having a vinous odor and a burning taste. The refined product is used as a denaturant. Radiator alcohol until recently contained ten per cent. methyl alcohol. This has been reduced to two per cent. because there were so many deaths following the use of the ten per cent. product as a beverage. Some people have a tolerance to methyl alcohol. Benetal¹ reports the case of a man who drank one pint of the ten per cent. mixture daily without any ill effects. Usually methyl alcohol if taken in large quantities results in death or in permanent blindness. In smaller repeated quantities it exerts an accumulative effect eventually leading to death or blindness. Small repeated doses of ethyl alcohol give no such effect because the alcohol is completely oxidized to carbonic acid and water. Oxidation of methyl alcohol results in the formation of still more poisonous products, formic acid and formaldehyde. The action of methyl alcohol on the living organism is due to the formation of these incomplete oxidation products.

Clinically large doses may have no serious effect for twenty-four to forty-eight hours. One of the cases under discussion suffered his first symptoms twelve hours after a drinking bout. He died before the next twelve hours had passed. A companion attended the first man's autopsy and spoke of his own good health at that time. Twenty-four hours later he laid on the autopsy table. Another companion recovered.

Briefly the symptoms and signs that were evidenced by the poison cases were:

1. Weakness. A feeling of general lassitude and loss of strength.
2. Headache.
3. Dimmed vision progressing to blindness. These eye changes are always present in some degree.

4. Abdominal pain and vomiting—the vomiting is persistent. Bloody mucus and shreds may be expelled.

5. Dyspnea and cyanosis. There is a severe acidosis. The respirations are slower and deeper than normal. The cyanosis is very marked, the individual becoming almost indigo blue.

6. Convulsions and coma. Barbash² reports a case in which there was severe meningeal irritation. An arachacentesis relieved the intracranial pressure and the meningeal irritation subsided. Two of our cases were treated with spinal puncture. One showed some increased intraspinal pressure. Both died.

The coma is somewhat delayed when compared to that of ethyl alcohol but continues for a longer period of time.

7. Death. From cardiac paralysis in our cases. Other authors report deaths due to respiratory paralysis.

8. Laboratory Examination:

Urine: In the acute cases there is a severe acidosis giving an increase in the amount of titratable organic acids, especially lactic and formic. In the chronic cases there is a marked albuminuria and the presence of granular, cellular and hyaline casts in large numbers.

Blood: In the acute cases there are no characteristic blood changes. In the chronic cases there is a marked anemia.

The autopsy findings were of interest. Norris³ states that most cases when autopsied are negative except for a general visceral congestion. Our findings were so consistent in these eleven cases that we are prepared to state that wood alcohol poisoning does produce characteristic changes in addition to a general visceral congestion.

External examination revealed two types of bodies, the flaccid of which there were nine—and the spastic of which there were two. The former evidenced a normal amount of rigor mortis. The cyanosis was marked, the color being almost an indigo blue. The spastic type were abnormally rigid. The bodies were hyperextended, the arms flexed at the elbows, the thighs flexed on the abdomen and the legs on the thighs. The bladder and rectum had emptied. The skin was a mottled pink as in cyanide poisoning.

Only the brain showed any gross pathological change. There was an increased amount of cerebrospinal fluid and a mild degree of edema

of the brain. The optic nerves all showed edema and those of the individual who had been sick for four days had undergone cloudy swelling and marked degeneration. No eyes were removed for examination. In experimental animals dying of methanol poisoning there is always a degeneration of the retinal ganglion cells as well as degeneration of the optic nerve.

Gross examination of the heart and lungs were characterized in the spastic cases by a contraction of the heart until it was one-half the normal size. The lungs were completely filled with air, the individual dying at the end of an inspiratory breath. In the flaccid cases the heart, particularly the right side, was dilated. The lungs were congested and edematous, the dependent portions being full of fluid. When the abdomens were opened no free fluid was found. In the spastic type extreme contracture of the muscle of the stomach and intestine had occurred reducing the lumen of these organs to a minimum and expelling their contents. Strassman⁴ autopsied one case years ago with similar intestinal contractures. In the flaccid type the intestines were in a state of muscular relaxation and were full of their normal content.

The mucosa of the esophagus and stomach showed varying degrees of pathology. The mucosa of the stomach of the individual who died twelve hours after drinking the methyl alcohol was only mildly congested. In one individual who had been sick three days the esophageal mucosa and mucosa of the stomach at the esophageal opening and in the prepyloric area was ulcerated and eroded. The characteristic change in the other cases was a hemorrhagic gastritis of a mild degree.

Every liver was congested. Microscopically there was a degeneration of the liver cells. In the individual who lived four days there was an acute yellow atrophy.

The pancreas in every case was the site of a hemorrhagic pancreatitis. The most profound pancreatitis occurred in the individual who died in the first twelve hours. His pancreas was three times the size of the normal. It was swollen, red, edematous and filled with multiple hemorrhagic areas.

The kidneys all showed a distinct congestion. In the individual who lived four days, there was

a cloudy swelling and degeneration of the glomeruli and tubules. All the kidneys evidenced a degeneration to a lesser degree. The kidney pathology accounts for the albuminuria and casts found in the prolonged cases of alcohol poisoning.

Characteristic of methyl alcohol poisoning are the following changes:

1. Degeneration of the retinal cells and optic nerve.
2. Hemorrhagic pancreatitis.
3. Degeneration of the liver.
4. Degeneration of the kidneys.
5. General visceral congestion.

Treatment is supportive and eliminative. The acidosis is combated by large intravenous infusions of 5 per cent. sodium bicarbonate solution. Stomach lavage is imperative, and must continue three or four days. Bongers recovered three times as much methyl alcohol in the gastric lavages of the second and third day, as he was able to obtain the first day. This indicates that methyl alcohol is excreted into the intestinal tract, and long gastric lavages are necessary. An inlying duodenal tube of the Ewald type or a nasal tube is advantageous. The individual may drink fluid freely and the inlying tube allows for a continuous drainage, making the stomach lavage an automatic procedure. Hot packs are used to remove the burden from the kidneys and promote elimination. Heat should be applied to the body between hot packs. Cardiac stimulants such as digifolin and caffeine are given hypodermically. Morphine is indicated for pain. Meningeal irritation is to be relieved by arachnoiditis.

The prognosis must always be a guarded one. Energetic, persistent, and intelligent treatment will be rewarded by a fair percentage of recoveries. In dealing with so fatal a poison that is the best to which even the most ambitious can aspire.

In summation there are four points to be observed:

1. Methyl alcohol when taken in poisonous quantities produces a definite clinical picture.
2. The treatment is supportive and eliminative.
3. The prognosis must be guarded.

4. The autopsy findings are characteristic.

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THE RELATION OF THE EAR TO THE NASAL ACCESSORY SINUSES*

NOAH SCHOOLMAN, M. D.,

CHICAGO.

The eye, ear, nose and throat have been thrown together, evidently because it was thought that quite a few odds and ends were needed to furnish a man's time. The eye, however, has long attained its independence, so that at present there are few, if any, outstanding ophthalmologists who do not devote themselves exclusively to the eye. The throat also aspires, and is on its way, to achieve independence—what with laryngoscopy, bronchoscopy and esophagoscopy with its multitudinous equipment which surrounds it.

There still remains the nose and ear to keep company together, and our present theme is to show the intimate relationship that exists between them. Let us consider the significant anatomical analogies between the nose and the ear:

1. Both consist of osseous structures lined with a mucous membrane.
2. Both communicate with the air on the one hand and on the other with the brain—the ear by way of the meatus internus and the nose by way of the cribriform plate.
3. Both communicate with the naso-pharynx.
4. Both consist of a main chamber—the tympanic cavity in the one and the nasal chamber in the other which communicate with a system of adjunct spaces between the inner and outer tables of the bones of the skull, the mastoid spaces, and the spaces of the nasal accessory sinuses.

These anatomical analogies are basic, fundamental and far-reaching in their clinical impli-

cations. The physiological analogies are not so significant. Both systems contain an end organ—the labyrinth in the rear and the olfactory organ in the nose. The labyrinth is the one important factor in the clinical determination of the ear. The olfactory organ does not hold the same position in the clinical values of the nose. Rather the secondary function of the nose, that of respiration, assumes the leading role.

When we come to the consideration of pathology, we again strike firm, common ground. The aural and nasal systems are both characterized by the pathology of a mucous membrane resting upon an osseous base where the phenomena of catarrhal inflammation merge and over-lap that of osteomyelitis. Both depend for their normal integrity upon the free and unobstructed communication with the air. Both share in the dangers of intra-cranial complications along more or less definite routes of invasion. In both, the adjunct spaces, the mastoid and the sinuses, are the regions of their unfolding pathological story.

Now, as to etiology, we see that both systems are prone to infection, because both open upon the naso-pharynx and are thus made joint heirs to all the affections of the upper respiratory tract, including tonsillitis, the exanthemata, influenza and other infectious diseases.

In symptomatology and diagnosis, the two systems do not display important analogies. There is nothing in the nose which is analogous to the labyrinth of the ear. Besides, there is the unique scroll of the tympanic membrane upon which is written the great story of the ear for the otologist to read, much as the ophthalmologist reads the fundus of the eye—its position, inclination, texture, lustre, consistency, transparency, light reflex, injection, pulsation, bulging, thickening, adhesions and atrophies. Then there is the eloquent story of the perforations—central, marginal, single, multiple and attic. Then there is the story of the ossicles—the retractions, ankylosis and necrosis. Then there is the evidence written on the very walls of the tympanic cavity—six of them—for the discerning otologist to consider. There is also the unique story of cholesteatoma so eloquent to the otologist. Then there is also the boding threat

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of contiguous structures, the lateral sinus and the facial nerve.

Last, but not least, there is the great chapter of the functional tests. The rhinologist will have a long way to go before he will catch up with his brother otologist in the systematized reading of the nose and its sinuses. The rhinologist, however, retains a strategic position, as we will soon see.

Dismissing the consideration of the course, termination and indications as unimportant to the present theme, and taking up the subject of treatment, we at last arrive at the gist of our subject, namely, the important role that the treatment of the nose and sinuses plays in the treatment of the diseases of the ear. In the close relation of the ear and the nose, it is the nose that plays the more important part. We are, seldom called upon to treat the ear for the sake of the nose, but we are constantly called upon to treat the nose, its sinuses, and the nasopharynx, for the sake of the ear, both actively and prophylactically. The ear, in a way, is an innocent victim of the nose and nasopharynx, including the tonsils, and much of the success of treatment of the former depends upon attention to the latter. While this is nothing new, it cannot be over-emphasized. We often have cases of bilateral otitis media, particularly in children. When both ear-drums are incised we note that one ear pursues a mild course toward recovery, while the other ear follows a severe course toward surgical mastoiditis. Often diligent search in the nasal sinuses and nasopharynx, including the tonsils, will disclose the reason. And timely treatment of an infected antrum, for instance, might have prevented many mastoid operations. Again, we often have cases of mastoid operation which do not progress favorably. Here also a sinus infection may be the cause. The troublesome recurrence of mastoid infection, after mastoid operation, in children, must be attributable to untreated upper respiratory and sinus conditions.

Resume: 1. Upper respiratory conditions, including the sinuses, tonsils, and for the sake of completeness, let us also mention the teeth, are responsible for most ear infections.

2. They are responsible for many of the ear infections which run a severe course and show no inclination to respond to treatment.

3. They are responsible for many ear infections necessitating mastoid operation.

4. They are responsible for many unsuccessful mastoid operations.

5. They are responsible for many recurrences of mastoid infection after mastoidectomy, particularly in children.

6. They are responsible for many cases of chronic otorrhea and, hence, responsible for much of the trouble that follows in its train.

7. They are responsible for much of the impaired hearing in children.

Conclusion: Every ear examination should also include as thorough an examination of the nose, sinuses, naso-pharynx, tonsils and teeth, as if these conditions were the primary complaint. Also, in the treatment of the ear, those other conditions should be made the objects of as thorough treatment as if they were the primary cause of the complaint.

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DISCUSSION

Dr. Frank W. Brodrick, Sterling: I do not believe that a man is doing good otological work unless he does some rhinological work as well. More complete examination of the nose in connection with the ear will eliminate a great many of the sequelae of the original condition.

Dr. O. J. Nothenberg, Chicago: I have seen a great many ear affections associated with rhinological pathology. I believe there is a possibility for the ear disease to continue until a concurrent sinus infection is cleared up. In other words there may be a constant reinfection through the Eustachian tube. Sinus disease will lower the vitality of the patient and where we eliminate it it will help to conquer the other condition. They should be treated at the same time, and to treat one and not the other does not give the best results.

Dr. Noah Schoolman, Chicago (closing): We might also include the eye. We are seldom called upon to treat the eyes for the sake of the sinuses but we are often called upon to treat the sinuses for the sake of the eyes. I can cite a number of cases referred to me from the Eye Department of the Illinois Eye and Ear Infirmary to find foci in the sinuses to combat eye manifestations, so that the ophthalmologist as well as the rhinologist is well aware of their close connection.

ACUTE EPIDIDYMITIS IN THE LIGHT OF RECENT EXPERIMENTAL WORK

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Acute epididymitis, or inflammation of the epididymis, is undoubtedly the most common form of pathology encountered in the scrotum. Although it usually is associated with manifest and easily diagnosed gonorrhea, cases not infrequently occur in which the specific infection is denied, and the signs of which may be most difficult to discover.

The most frequent etiologic factor in acute epididymitis is the *Gonococcus* of Neisser, although non-venereal organisms such as the *Staphylococcus aureus* and the *Streptococcus viridans* are often the exciting bacteria. Occasionally the *Bacillus coli* may be the invading organism, particularly so in the old and debilitated. The Koch bacillus also has been isolated from acutely inflamed epididymes, and multiple miliary tubercles were demonstrable studding the organ. Acute epididymitis is most frequently met with in young adults, the most common age ranging from 20-30. The earliest case in our experience was in an infant of two, following a herniotomy; the right epididymis was intensely engorged, gangrenous and a plastic, fibrinous exudate coated it. The organism recovered was *Staphylococcus aureus*. The oldest case occurred in an old prostatic of 80, who had a long-standing cystitis, and who showed *B. Coli* and *Staphylococcus aureus* on culture from the epididymis. Trauma occasionally plays a part in the production of acute epididymitis. The latter is rarely produced through the injury itself; however, an old latent infection, or a co-existing one, may be stirred up through the accident.

The symptoms vary in degree; they may be mild, with slight pain and just obvious enlargement of the epididymis, causing very little or no discomfort; or most severe, with great enlargements; exquisite pain and tenderness and often considerable redness and edema of the scrotum. There is present, swelling of the epididymis

which is painful, tender to touch and which stands out prominently from the back of the testicle which is itself often inflamed. In its severe form, it is usually associated with acute hydrocele of the tunica vaginalis, which may hide the enlargement of the epididymis from the palpating finger. In these cases, the acute tenderness behind and below gives us a strong clue as to the nature of the disease, apart from the associated urethritis if present. The cord is affected in a certain proportion of cases, being thickened and possibly painful, particularly at the internal ring. the pain in the testicle radiating up into the abdomen. The patient assumes a characteristic gait; he bends over as he stands and walks with his legs straddling in order to relax the spermatic cord and relieve it from the weight of the enlarged and tender scrotum.

The purulent discharge, if gonorrhea is associated, usually ceases at once, and remains absent until the inflammation in the epididymis is better and then begins again, but scarcely ever as profusely as before.

On examining the scrotal contents, the epididymis is found enlarged, hard and tender and occasionally the testis may be hard to outline on account of the effusion of serum into the sac of the tunica vaginalis. The spermatic cord is thickened and very tender. Rectal examination usually reveals an enlarged prostate, and a tender distended vesicle on the affected side. The inflammatory products usually disappear by resolution, and rarely suppurate. The acute symptoms abating in approximately six days.

The usual path of infection is not by metastases through the blood vessels or lymph channels, as is commonly found in the non-venereal type, but is caused by the passage of the invading organism, either ascending from the urethra, or descending from the kidney, through the posterior urethra to the epididymis by way of the vasa deferentia and seminal vesicles.

The body of the testicle proper is not involved, as a rule, and the inflammation is limited to the epididymis, but the testicle is often apparently enlarged on account of its being surrounded by the swollen and inflamed epididymis. Another element which causes the testicle to appear larger than normal is the effusion of serum which takes place into the sac of the tunica vaginalis and

*From the Genito-Urinary Dept. of the Michael Reese Dispensary. Read before the Staff of the Post Graduate Hospital and Medical School.

causes hydrocele. This effusion may in time be absorbed, or remain permanently and even increase.

If both epididymes have been affected, a condition of permanent sterility may be left; in fact, the most frequent cause of sterility in the male is bilateral epididymitis. The function of the testicle may be destroyed in any of the following ways:

1. The most common is the formation of an inflammatory exudate in the head of the epididymis, which is not absorbed, but remains and forms a plug blocking the efferent duct.

2. An atrophy of the glandular structure of the testicle may occur, probably as a result of inflammatory products in its substance.

3. In very exceptional cases the body of the testicle suppurates and sloughs out, and in this way the organ itself may be entirely destroyed.

It has recently been demonstrated experimentally that the inflammation of the epididymis in these acute infections is not within the tubular structure of the organ, but in the interstitial and perivascular tissues. Organisms injected into the vas deferens extend along the lumen of the vas till the tail of the epididymis is reached and then extravasate, penetrating the tubular epithelium and setting up a peritubular and interstitial inflammation in the tail; the infection then extends upward involving the rest of the epididymis by interstitial extension.

Chemicals, on the other hand, stay within the lumen of the tubules of the tail and do not extend extratubular nor travel beyond this boundary. This point is of value in outlining a course of rational treatment.

The diagnosis of acute epididymitis is generally easy because of the symptoms and physical signs which are so apparent. Also because of its acuteness and association with gonorrhea.

In its quieter forms, however, tuberculosis of the genital organs must be thought of. This is particularly the case as examination per rectum not infrequently discloses prostatic and vesicular disease in tubercle. Yet there may be a urethral discharge present. It is distinguished by the smoothness of the epididymis, which contrasts with the irregularity of the tubercular swelling. Tuberculous disease of the epididymis occasionally follows an acute gonorrheal epididymitis,

and is due to the lighting up of a focus of tuberculous material which has lain unsuspected and dormant in the epididymis.

Gonorrheal epididymitis very rarely results in abscess formation, and then usually breaks at one point only after an acute attack. On the other hand, tubercular disease tends to form multiple fistulae, after a more chronic course, with involvement of the vas and a tendency to abscess formation. In the pus of an epididymitis which has broken through the surface, microscopical examination may reveal the exciting organism. Also, one must bear in mind that tubercular disease here is often associated with similar disease elsewhere.

Syphilitic epididymitis is comparatively rare apart from that of the testicle but may occur as an early manifestation, i. e., within a few months of the original infection. The upper part of the epididymis is affected, one or more painless elastic swellings occurring there.

It is diagnosed from recovering gonorrheal or non-venereal epididymitis by its association with syphilis rather than with gonorrhea or non-specific infection, and by the absence of any history of an acute inflammatory process or of other signs of inflammation in the epididymis, such as nodular enlargement of the globus minor. In the diagnosis of syphilitic affection of the epididymis a positive Wassermann reaction would be evidence for the syphilitic nature of the lesion, but naturally not conclusive for the co-existence of double infection is not uncommon in the cases we have seen. The positive reaction might be evidence of a luetic infection elsewhere in the body. A negative result, however, would support a diagnosis of some non-luetic condition.

Inflammation of the epididymis due to other bacteria such as *B. coli*, *Staphylococcus*, *Streptococcus*, and others are not quite as rare as formerly supposed. Theodore Baker states that non-venereal infection constitutes about twenty per cent. of all genital infections. We believe this percentage to be rather high, nevertheless, the fact remains that a large percentage of acutely inflamed epididymes are non-venereal and should not be overlooked. It may be impossible to diagnose gonorrheal epididymitis on the local signs alone. When the epididymis is inflamed, one naturally thinks of gonorrhea, but

cases do occur in which gonorrhea or even exposure to infection is stoutly denied; and, there may be no urethral discharge, or if it does exist, does not contain Gonococci. The diagnosis then depends on the presence of obvious signs of other bacterial infection of the urinary system, such as *B. coli* pyelitis with cystitis and bacteriuria, intestinal infection with metastasis, skin infections with *Staphylococcus aureus*, abscessed teeth or infected tonsils with *Streptococcus viridans*, and many other foci of infection with their associated bacterial emboli, which select the epididymis, particularly after it has been previously undermined by the Gonococcus.

Traumatic inflammation of the testicle and epididymis must be distinguished by the absence of either an associated gonococcal urethritis or non-venereal inflammation due to a focus of infection, and the history of an injury to the affected part. It is not safe, however, to rely on the history of trauma alone, since the latter may precipitate a gonococcal epididymitis in a patient who is already suffering from a specific urethritis. Traumatic epididymitis does occur, however, with the resultant pathological changes here of congestion, edema, cell migration, etc., as elsewhere, following tissue injury.

Mumps may be complicated by an acute orchitis and more rarely by epididymitis. There may also be a urethral discharge.

Influenzal infections have been the cause of acute epididymitis and must be diagnosed.

Development cysts and spermatocele would be excluded by the absence of a gonorrheal history or signs of acute inflammatory changes and if necessary aspiration.

Malignant disease of the testicle with secondary involvement of the epididymis requires some deliberation at times in order to differentiate it from acute epididymitis. The latter is diagnosed in its acute form by the greater rapidity of its progress and retrogression. If the patient happens to apply for advice when the epididymis is quiescent and chronically enlarged, he can generally give a history of an acute attack which may coincide with one of gonorrhea or some non-venereal infection. In regard to progress, chronic gonorrheal epididymitis differs from malignant disease in its stagnation or tendency to retrogression while the latter pro-

gressively advances. Moreover, acute epididymitis is mainly confined to the epididymis.

In connection with acute epididymitis, it is well to remember that at the onset its symptoms may closely resemble that of commencing appendicitis. It is therefore very essential to rule out right sided epididymitis, particularly in right lower abdominal pain. Vomiting, acute pain in the right iliac fossa, increase of pulse rate and rise in temperature are often present in right sided acute epididymitis. The border of the rectus muscle is not, however, so rigid in epididymitis; there is often acute tenderness of the epididymis and of the cord, especially at the internal abdominal ring; and the patient does not look so ill as an appendix case requiring immediate operation, and the pulse does not increase progressively in rate. Rectal examination may facilitate the diagnosis, as in epididymitis, a tender enlarged vesicle is often felt on the affected side. Proper treatment immediately instituted usually results in subsidence of the appendix-like symptoms in a few hours. Cases of epididymitis do occur, however, which imitate appendicitis so closely that the diagnosis may remain in doubt during some hours of careful watching, and is only rendered after the symptoms of acute epididymitis manifest themselves clearly, and expectant conservatism is justly rewarded.

In closing, we might mention two conditions which must be differentiated from acute epididymitis because of their close resemblance clinically; torsion of the spermatic cord and acute orchitis. The first requires immediate operation; the latter responds well to the treatment indicated for acute epididymitis.

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ACUTE OSTEOMYELITIS OF THE SPINE*

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Acute pyogenic osteomyelitis is essentially a disease of the growing period and has a tendency to attack the long bones, although the short flat bones are not infrequently involved. The statistics of Frohner and Haag¹ show that in 545 cases of this disease, there was an involvement of 661 long bones and 51 short bones, the vertebrae being involved in only one instance. Hahn² estimates the proportion of involvement of the short, flat bones to that of the long bones as one to twelve and of these the vertebrae are least often the seat of this disease.

The occurrence of osteomyelitis of the vertebra, however, is probably more common than these statistics would indicate. The real nature of the disease is often not recognized owing to early visceral and cord involvement by the inflammatory process. This often leads to erroneous diagnoses, such as myelitis, retropharyngeal, deep cervical, mediastinal, paranephritic, retroperitoneal or pelvic abscess, empyema or suppurative myositis. The sudden onset of the disease with the attendant profound toxemia, often leading to delirium, stupor and early death, frequently leads to the diagnosis of some general infection as typhoid, meningitis or pneumonia and the underlying bone lesion remains unrecognized.

Early reports of this disease were made by Valleix (1839),³ and Stanley (1849),⁴ but no comprehensive article appeared in medical literature until the publication of Lannelongue's⁵ monograph in 1879. Since that time there has developed a considerable French and German literature upon the subject. The only English publications have been by Makins and Abbott⁶ in 1896 and Ramsey Hunt⁷ in 1904. Among the contributions to this subject, deserving special mention, are those of Joel (1893),⁸ Hahn (1895 and 1900), Grisel (1903),⁹ Donati (1906),¹⁰ Volkmann (1914-1915),¹¹ Mathieu (1924),¹² and Mayet and Lageneste (1924).¹³ Since the preparation of this paper an excellent article upon this subject has been published by Wilensky.¹⁴

Volkmann's article is most exhaustive and is

based upon eighty-seven cases, four of which had not been previously reported.

The following case came under my observation in July, 1927:

T. D., 35 years old, Italian, married and a coal miner. He stated that he had always been well and strong and had worked regularly as a coal miner during the previous winter and spring. He had never had any serious illnesses and, except for minor accidents, had not consulted a physician on account of his health.

On July 4, 1927, while lifting a sack of cement, he slipped and the full weight of the cement came on his right arm, giving him a severe jerk. He did not fall. He felt pain in his back, between his shoulder blades, but was able to continue at work the rest of the day and for five or six days subsequently. On July 11, he complained of severe pain in the back, between the shoulders, and became "sick all over." He consulted his physician who found him complaining of severe pain between the shoulders, radiating around both sides of the chest to the sternum. He had fever, general malaise and nausea. He was sent to St. John's hospital. July 17.

On entrance his temperature was 102, pulse 60 and respirations 30. He walked into the hospital but his back pain became so severe in the afternoon that it required morphin for relief. The pain was dull and aching, increased by exertion, most marked in the upper dorsal region and worse at night than during the day. In addition to the dull ache, he complained of lancinating pains radiating into both axillae and into the front of the chest.

Examination showed a middle aged, well built, Italian with good panniculus and firm musculature, who looked acutely ill. His face was flushed. He lay quietly in dorsal decubitus and did not turn in bed on account of severe back pain. His pupils were equal and reacted to light and accommodation. There was no evidence of cranial nerve involvement. The fundi showed nothing abnormal. His hearing was normal and neither ear drum showed evidence of inflammation. His neck was rigid and attempted movement caused pain in the upper dorsal region. The mouth, throat and teeth were negative. There was no abnormality in the chest, lungs, heart or blood pressure. The abdomen showed moderate distension and slight general tenderness without rigidity. The spleen and liver were not felt. He showed evidence of tenderness along the entire spine, most marked over the upper dorsal region. His reflexes were normal. He had bladder and rectal control and no abnormality of sensation. Straight leg raising was normal. The urine was negative. The blood showed 3,700,000 reds and 12,400 leucocytes with 79% polynuclears. Widal reaction was negative. A spinal puncture was made and showed clear fluid under slightly increased pressure with fifteen cells, positive globulin, negative Kahn and colloid gold 1111122222. For the next few days the temperature ran a more or less irregular course, varying from 99.6 to 103 and leucocytes from 12,000 to 18,000. His presenting symp-

*Read before Section on Surgery, Illinois State Medical Society, Peoria, May 21, 1929.

tom was pain in the upper dorsal region. On July 24, he showed extreme tenderness to percussion over the first three dorsal vertebrae. There was no sensory disturbance and no interference with the bladder or rectum but ankle clonus was present on both sides and there was a definite left Babinski. X-ray of the spine was made and showed an area of absorption in the bodies of the second and third dorsal vertebrae on the right side. On July 26 he showed slight numbness in both feet and was having difficulty in emptying his bladder. Spinal puncture showed a clear yellow fluid under slightly increased pressure, twenty-three cells and definite slight clot on standing. A diagnosis of osteomyelitis of the bodies of the second and third dorsal vertebrae was made.

On July 26, under nitrous oxide anaesthesia, an incision was made from the first to the fourth dorsal spines. The head of the third rib was removed on the right side. Pus was encountered in separating the tissues and necrosis of the bodies of the second and third vertebrae found. Some necrotic bone was removed with a curette and drainage introduced to the bodies of these vertebrae. Culture showed *Staphylococcus albus*.

Following operation he was distinctly more comfortable and the temperature dropped to normal with afternoon rise to 100.6. On July 30 he had a distinct chill, slight cough and blood streaked sputum but no evidence of consolidation in the chest. His pain became much less but he gradually developed a complete paralysis of the legs, incontinence of feces, urine retention and complete anesthesia from the level of the nipples down. His temperature continued to run an irregular course. A severe pyelitis developed and on Aug. 12 a bed sore appeared on the sacrum. He became very ill and showed progressive loss of weight and strength until the latter part of August when his appetite improved, his pain became less and his temperature became lower. The paralysis, anesthesia and loss of bladder and rectal control remained. Up to this time further operation had not been considered on account of his general condition and severe kidney infection. Feeling, however, that there was an abscess within the spinal canal, pressing on the cord, a laminectomy was done September 7, removing the spines and laminae of the second and third dorsal vertebrae. The transverse process of the third dorsal vertebra and the bodies of the second and third dorsal were found necrotic and organized exudate found on the dura. On September 11, he complained of burning sensation in both legs and feet. September 14 there were involuntary, painful contractions of both legs. The urine continued to show large amounts of pus and the temperature ran an irregular course varying from normal to 102. The pain and burning in the legs with involuntary contractions continued. On October 1 he had partial control of the bowels and was able to void urine. His temperature reached normal on October 2 and continued so throughout his stay in the hospital. On December he could voluntarily flex the second, third and fourth left toes and superficial and deep sensation of the legs was nor-

mal. He had complete control of his bladder and rectum. By December 29 he could flex and extend the right leg, right foot and right and left toes and make voluntary contractions of the muscles of both thighs. On April 1 he had increased markedly in weight, was free from pain and showed normal sensation. His legs were spastic but he could walk with assistance. He showed bilateral ankle clonus, bilateral Babinski and a tendency to cross his legs in walking. He was discharged from the hospital May 12, 1928, walking with the aid of crutches. He was last seen October 22, 1928, at which time he was walking with a spastic gait but with no tendency to cross his legs. He complained of no pain, had gained markedly in weight and felt well. He had normal bladder and rectal control and no loss of deep or superficial sensation. At night the legs had a tendency to draw up and cramp but he had no difficulty in straightening them out. He could walk without assistance but he used a cane on "long trips." Examination showed increased knee and ankle reflexes, bilateral ankle clonus and bilateral Babinski.

As in osteomyelitis in other locations, this disease is one of childhood and adolescence, although a few cases have been reported occurring in the fourth and fifth decades.

At birth each vertebra consists of three united cartilaginous portions; one for the body and one for each lamina and its processes. The laminae become united posteriorly during the first year and the neural arch is joined to the centrum about the third year. These primary centres continue to grow until the fifteenth year, when four secondary centres of ossification appear; one for each transverse process and two for each spinous process. A thin epiphyseal plate develops on the upper and under surface of the vertebral body at the twenty-first year. The vertebra is not completely formed until the thirtieth year. Infection usually occurs before this time.

In fifty-nine cases reported by Volkmann, eighteen occurred during the first decade, thirty-one during the second, seven during the third, one during the fourth and two during the fifth.

The affection is much more frequently seen in males than females. In Volkmann's cases, seventy-two per cent. were in males.

Any portion of the spine may be involved. It is much more frequently seen in the lumbar and dorsal region, less frequently in the cervical region and least often in the sacrum.

Acute pyogenic osteomyelitis is a metastatic lesion. The primary portal of entry is a surface lesion such as furuncle, carbuncle, paronychia.

eczema, acne, carious teeth, infected tonsils, or lesions of the alimentary tract. It may also follow general infections such as puerperal sepsis, acute respiratory disease or any other lesion producing a bacteremia.

Trauma probably plays an important part as the exciting cause of this disease, producing a point of lowered resistance, allowing thrombosis to occur more readily and thus preparing the site for accumulation and multiplication of bacteria. Fatigue and exposure to wet and cold have been considered contributory causes. In many cases the etiologic factor cannot be determined.

The infecting organism, in thirty cases of Volkmann's series, proved to be *Staphylococcus pyogenes aureus* in twenty-four, *Staphylococcus pyogenes albus* in four and *Micrococcus tetragenus* in two.

Tuberculous osteomyelitis of the spine almost invariably attacks the vertebral body while in acute pyogenic osteomyelitis the processes and laminae are more frequently involved. Volkmann gives the percentage of involvement as fifty-eight per cent. for the arch and processes, thirty-four per cent. for the body and a combination of arch and body in seven per cent. The intervertebral discs are occasionally involved.

The clinical picture, complications and prognosis of this disease vary with the part of the vertebra involved. Osteomyelitis of the neural arch may give quite different local symptoms than those found in involvement of the vertebral body. In this type the spinous process or the transverse process may be involved alone or there may be a diffuse involvement of the entire posterior arch. Infection is soon followed by abscess formation, denudation of bone and occasionally the formation of sequestra. The actual involvement of the deeper bone tissues is usually small and the sequestra formed are rarely of large size. There is a marked tendency to rapid healing.

With abscess formation, pus finds its way out of the bone by various paths depending upon the primary location of the infective process in the vertebra and the portion of the spine involved.

With involvement of the posterior arch the tendency is to extend to the surface of the body although the path of extension may be to the spinal canal. The direction in which the sup-

uration spreads is determined by the anatomical condition of the region involved.

The general symptoms of this disease do not differ in any way from those of acute osteomyelitis in other bones. The initial picture is that of an acute general infection. It is ushered in by high temperature and often preceded by chill. The patient looks acutely ill and suffers from malaise and general aching. The infection is often so overwhelming that delirium, stupor and death rapidly take place. The disease is often unrecognized on account of a fatal termination before any localizing symptoms occur. In addition to the picture of a general infection there is from the onset severe pain over a wide area of the back with general tenderness of the back muscles. The patient lies in a position to relieve strain and moves carefully and with caution. Attempted movement provokes muscle rigidity and spasm. Often a neck rigidity and false Kernig are noted at this time leading to a diagnosis of meningitis. After a period of a week to ten days, in addition to the symptoms of a general infection, local evidence of the disease becomes apparent. The general back tenderness becomes more localized to the vertebra involved and percussion tenderness over this area is pronounced and painful. With the extension of the inflammation to the nerve roots a different type of pain develops. In addition to the deep, boring, agonizing ache of osteomyelitis is added a radiating, lancinating pain referred to the anterior chest wall, abdomen or legs. With the progress of the disease abscess formation becomes evident and the local findings depend upon the location of the focus in the vertebra as well as the region of the spine involved. In disease of the posterior arch there is a tendency for the abscess to point posterior and evidence of edema, local tenderness, heat and swelling are apparent much earlier than in involvement of the transverse process or bodies. The direction in which the abscess points depends upon the anatomical arrangement of the parts involved. In involvement of the spines and lamina the tendency is to posterior pointing, although a deeper, dissecting phlegmon may occur or the abscess may involve the spinal canal. With involvement of the transverse processes a tendency to extension along the muscles, directed by the fascial planes, is noted. Involvement of the body shows a

greater tendency to perforation of the spinal canal, or to point anterior into the retropharyngeal, mediastinal or retroperitoneal spaces. The abscess may point at a site far removed from the original focus of the disease. Thus gluteal and psoas abscesses have been frequently noted.

X-ray in the early part of the disease is of very little value but after a period of a week to ten days may give valuable information as to the part involved.

Spinal puncture will aid in the differentiation from meningitis but it is not without danger.

Intraspinal involvement is evidenced by paresthesias, followed by various stages of motor palsies, anesthetics and involvement of bladder and rectum.

The treatment of this condition is essentially surgical and depends upon the location of the abscess. In those cases with posterior pointing, simple incision and drainage will, in the majority of cases, result in cure. In involvement of the transverse processes or bodies more extensive operation is imperative, the approach varying with the location of the abscess. When extension is into the canal resulting in extra dural abscess or in pressure from vertebral necrosis, a spinal decompression is indicated. When meningitis, myelitis or subdural involvement is present, surgery offers little hope for relief.

The prognosis depends upon the promptness with which diagnosis is made and surgical relief instituted. In involvement of the posterior arch, signs of localization appear early and drainage can be employed at an opportune time. While in anterior involvement, recognition of the true character of the disease is more difficult and wide spread involvement may occur before surgery is resorted to. "The statistics of Makins and Abbott show 71 per cent, those of Donati 48 per cent and Volkmann 41.8 per cent total mortality." (Steindler). "Mayet and de Lageneste estimate the mortality of osteomyelitis of the vertebrae for the lumbar spine a 76 per cent, for the dorsal as 60 per cent and for the cervical as 29 per cent." (Steindler).

In an article upon "An Unusual Case of Infection of the Spine," Leo Mayer¹⁵ has compiled a complete bibliography.

Steindler has thoroughly reviewed the literature of this subject in his book, "Diseases and

Deformities of the Spine and Thorax," recently published.

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16. Steindler: "Diseases and Deformities of the Spine and Thorax." C. V. Mosby Co. 1929, p. 461.

DISCUSSION

Dr. W. Stuart Wood, Decatur: Osteomyelitis of the spine differs very little in the clinical picture from osteomyelitis elsewhere in the body, until it involves the cord, if it does. The reason it is not recognized as osteomyelitis elsewhere, is that it is rare in that location. In some cases you can get a history of trauma, in others you cannot, and it is a variable factor anyway. There may or may not be a focus of infection elsewhere in the body to guide us. If there is we are fortunate, but it often happens that there is not. It has been shown that in normal vertebrae there are bacteria which cause absolutely no symptoms or evidence of disease, and trauma may excite osteomyelitis without any evidence of infection or focus elsewhere in the body. It is not unusual for it to be associated with osteomyelitis of some of the long bones, very often the femur, and especially in chronic cases of osteomyelitis of the femur you will sometimes find a focus in the spine. The direction in which an abscess points is not a very valuable guiding factor. I had one case in which the abscess pointed down the outside of the thigh making it look like osteomyelitis of the femur, but it really was in the spine.

As to spinal puncture, while it may be of value in ruling out myelitis or primary cord disease, it is in fact a very dangerous procedure, especially if the symptoms point to lumbar involvement, as you are very apt to introduce the bacteria into the spinal canal and thereby set up a condition that you might have avoided by refraining from spinal puncture until you had ruled out the possibility of osteomyelitis in that region. Of

course if the involvement is in the upper dorsal or cervical region the lumbar puncture does not possess the same risk.

The involvement, as Dr. Patton said, may be of the spines, the laminae, or the body of the vertebra and the spine shows the greatest percentage of cases, which is fortunate so far as the outcome of the disease is concerned because it is easier to operate on the spine than on the body of the vertebrae.

The results obtained by Orr of Nebraska in the treatment of osteomyelitis have been good. I have had marked success with his method. The technique consists merely of a wide incision to allow for adequate drainage of the abscess, leaving the incision wide open, packing with vaseline gauze and putting the part at rest by application of a plaster cast, then let it alone. I have not had an opportunity to try it out on osteomyelitis of the spine, but I see no reason why it would not be as effective as in osteomyelitis of the long bones. The main thing is adequate drainage. I think that technique in all cases of osteomyelitis would make for an increase in the number of recoveries, although it is not a hopeful disease at best.

Dr. George L. Apfelbach, Chicago: I would like to mention a case I had,—a man who was sent to my office for diagnosis of a suspected goiter. Basal metabolism showed no hyperthyroidism or other symptoms. The patient came back in three weeks with a rapid pulse and there were evidences of cord changes. X-ray and other examinations showed that he probably had a cord tumor. He died in a stupor. The x-ray showed nothing. Autopsy showed an abscess in the body of the ninth dorsal vertebra which had perforated producing a localized abscess of the cord. I quote this case as being applicable to the discussion, since this case shows that all forms of osteomyelitis can occur in the vertebra, even a Brodies' abscess.

NECESSARY PELVIC AND ABDOMINAL OPERATIONS DURING PREGNANCY* (Illustrative Cases.)

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CHICAGO

Until recent years operations on the internal and external genital organs were rarely performed during pregnancy. Even operations on nongenital organs during gestation were unusual performances. Nowadays, however, we do not have the same hesitancy concerning these operations, because with improved technic, better asepsis and proper post operative treatment, the danger to life is practically no greater than for

operations on non-pregnant individuals. When operations are performed in regions other than the genital tract, there is almost no risk of interrupting pregnancy but when the operations are done on the internal genital organs during pregnancy there is definite but not very great danger of abortion or miscarriage. The earlier in pregnancy operations are performed on the internal genitalia the greater the likelihood of interrupting the gestation. Operations on the external genital organs except the cervix have practically no effect on pregnancy.

Discussion of Cases: I have selected the case histories of a few patients on whom I operated during pregnancy and shall discuss each one separately.

Case 1. On October 14, 1922, Mrs. M. F., aged 26, came to see me because of inability to have sexual intercourse. She had been married four and a half years and while numerous attempts had been made, coitus could not successfully be consummated. Of importance in the patient's past history was the fact that she had had diphtheria twice. At the age of fourteen she experienced cramp-like pains in the lower abdomen every month but no blood escaped from the vagina. A physician was consulted and he inserted a finger into the vagina and broke something. After this, bleeding occurred regularly every month and was accompanied by little discomfort.

The patient said she had not menstruated for three months but did not remember the exact date of the last period. The breasts and abdomen had grown larger and there was increased salivation.

The general examination was negative except for a thyroidectomy scar. Pelvic examination revealed the following: The labia majora and minora were normal and there was abundant pubic hair. The hymen was sensitive and the orifice admitted one finger for a distance of 2 cm., but beyond this there was a tense stenotic ring of scar tissue. This ring could not be penetrated by the finger. Rectal examination revealed not only this circular band but also similar ones higher up. The cervix, which was high up and difficult to outline, seemed to be buried in adhesions above the vault rather than in the vault of the vagina. The uterus was enlarged to the size of a ten weeks' pregnancy, it was soft, anteflexed, and freely movable. The adnexa presented no abnormalities.

The patient and her husband at first refused to believe that a pregnancy existed, but despite this, wanted something done so that coitus could be made possible. Accordingly, on October 16, the following was done: The hymenal ring was first excised. Then the first strong band of scar tissue was incised, some of the scar tissue was removed and the cut portions stretched considerably with the fingers. Access was now obtained to the upper scars, of which there were many and these were very irregular. These scars were likewise in-

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cised in a few places and forcibly stretched. After this was done the vagina admitted three fingers very readily. The vault was exposed in the expectation of seeing the cervix. It was with great difficulty that the external os, which measured about 2 mm., was found and it was flush with the vaginal mucosa. The entire cervix was buried in tissue above the vault. During the operation numerous large veins were encountered. The cut edges of the mucosa in the first tense circular bands were approximated with interrupted catgut sutures perpendicularly to the lines of incision and then the vagina was tightly packed with gauze saturated with vaselin. The patient was given hypodermics of morphin for two days following the operation. No difficulty in urination was experienced because of the vaginal pack which was removed two days after the operation. Three days after this the patient was discharged from the hospital. Ten days later in making a vaginal examination, while the very strong circular band, the first one to be incised, was palpable, two fingers could be inserted to the vaginal vault without causing any pain. However, the vagina was stretched digitally until three fingers could be inserted. The uterus had now attained the size of a twelve weeks' pregnancy. On November 14, the patient returned for her complete obstetric examination and the vagina admitted two fingers all the way without difficulty. The patient was permitted to have intercourse and this was accomplished without much discomfort. Subsequent examinations revealed the enlargement of many veins in the vaginal mucosa and in the vulva so that they soon evidenced themselves as large, dilated, and tortuous varicose veins. Because of these varicose veins, a small pelvis, and the fear of a recurrence of the stenosis of the vagina, if delivery were attempted from below, it was decided to perform a cesarean section when the patient went into labor.

During my absence Dr. Horner looked after Mrs. F. On May 5 the patient presented herself in the second stage of labor. Preparations were made for a cesarean section, but before the instruments were ready, the fetal head was found to be well engaged. The child was, therefore, delivered with forceps after an episiotomy had been made. There was a great deal of bleeding from the veins in the vagina and from the episiotomy wound, but this ceased after tamponade. The patient made an uneventful recovery and left the hospital on May 14. When she returned for the customary examination six weeks after leaving the hospital, examination showed that the episiotomy wound had healed very well, but that the vagina was full of irregular adhesions again. Not more than one finger could be admitted into the vagina and that only for a distance of 2 cm. Beyond this point was a very dense circular stricture, the opening in which measured about $\frac{1}{2}$ cm. in diameter. On rectal examination more circular bands were felt higher up in the vagina. The cervix was very small and firm and the uterus, which was of normal size and consistency, was anteфлекed. The adnexa showed no abnormalities.

The patient refused to have anything done, but re-

turned several months later because her husband threatened to leave her if something were not done to enable him to have intercourse. On February 13, 1924, therefore, I performed a second and more extensive plastic operation. After leaving the hospital the vagina was stretched with glass dilators from time to time. Coitus after this was performed without any discomfort.

Discussion: The first operation, namely the one performed during pregnancy, was not in reality necessary, but the husband threatened to leave his wife if coitus remained impossible and so the operation was performed. At the time of the last examination the patient demanded that a cesarean section be the means of delivering her next baby. I did not hesitate to acquiesce in this demand because of the great likelihood of recurrence of the stenosis if vaginal delivery were attempted. Thus far the patient has feared to become pregnant again.

Case 2. Mrs. R. R., a primipara, aged 23, married three years, came to see me for the first time August 20, 1926, because of sterility and dysmenorrhea. Her family history was negative. At the age of 15 her appendix was removed.

Physical examination revealed a very short, thin individual who was 5 feet tall and who weighed only 89 pounds. The general physical examination revealed no abnormalities. Abdominal examination showed nothing other than a well-healed appendectomy scar. Vaginal examination was made with difficulty because the patient complained of great pain, even though the examination was made with only one finger in the vagina. The latter was very tight due most likely to spasm of the levator ani muscles. The cervix was long, conical, smooth, and was high up behind the symphysis. The corpus was slightly enlarged, hard, and deeply retroфлекed. The patient complained of much tenderness when an attempt was made to elevate the corpus. The adnexa could not be felt because the patient was uncooperative.

Since the patient came essentially because she wanted to have children, it was suggested that the husband's spermatozoa be examined first, and if that were normal, the uterus be anteфлекed and a pessary inserted into the vagina. If no pregnancy followed after a few months, the patency of the fallopian tubes would be tested.

The patient did not follow these suggestions, but returned on November 19, saying that her last menstrual period had occurred on October 5, and although she had expected one on November 7, none appeared. She was extremely nervous and vomited every morning. Vaginal examination again was made with difficulty because of resistance on the part of the patient. A definite Chadwick sign was present, but the cervix was not softened. The corpus was felt to the left of the midline, still retroфлекed, not larger than before, and not softened. To the right of the uterus was a hard, ir-

regular mass, the size of which could not be determined because when it was palpated the pain was so great that the patient almost jumped from the examination table. A tentative diagnosis of pregnancy and right ovarian cyst was made, and the patient was asked to return in two weeks, which she did. At this time (December 3) she complained of much pain in the right iliac fossa. She weighed 90 pounds. A vaginal examination revealed both Chadwick and Goodell signs. The uterus was still retroflexed, but softer and larger than before. The irregular mass on the right side appeared to be slightly larger and just as tender as at the last examination. The knee-chest position was advised twice daily. The patient was told about the mass to the right of the uterus, but I advised against an operation unless the mass grew rapidly or the pain became worse. The patient returned for another examination on December 19, at which time the uterus was anteverted, soft, and the size of a seven to eight weeks' pregnancy. The mass previously felt on the right side was much larger, more irregular, and lay behind the uterus, filling the entire culdesac and extending to the right side. It was more tender than before and the patient said she had a great deal of discomfort in the pelvis. A diagnosis of dermoid cyst of the right ovary was made and its removal advised because of the fairly rapid growth and pain.

On January 3 I made a Pfannenstiel incision and removed a dermoid cyst of the right ovary which measured about 8x6x6 cm. The uterus was purplish, soft, anteverted and enlarged to the size of a ten weeks' pregnancy. Great difficulty was experienced in elevating the dermoid cyst from the culdesac because the pelvic cavity was very small and the pregnant uterus was in the way. The dermoid cyst was adherent to the culdesac by a few thin adhesions which were easily severed. The dermoid alone was removed and when opened showed hair and sebaceous material. The left ovary was examined and found to be of normal size. No corpus luteum could be seen protruding above the surface. Before closing the abdomen the gall-bladder was palpated because a competent internist had told the patient that she had gall-bladder trouble. However, the gall-bladder felt normal and contained no stones. The patient was given a few hypodermics of morphin for two days following the operation. After an entirely uneventful convalescence the patient left the hospital thirteen days after the operation.

Examination six weeks later revealed the uterus to be in good position and the size of a sixteen to eighteen weeks' pregnancy. There was no tenderness at all in the culdesac or in the fornices. I delivered this patient at term by means of a low forceps operation.

Discussion: The first question which can be raised is the justification of the operation. I believe the operation was indicated because of the pain which was at times almost unbearable, but more particularly because of the rapid growth of the dermoid. The latter apparently was quiescent until pregnancy began. Since dermoids are fetal

tissue, perhaps the hormones of pregnancy which stimulated the growth of fetal tissue within the uterus also stimulated the growth of the dermoid.

In our case the removal of the ovary containing the dermoid cyst at approximately the tenth week of pregnancy did not interrupt the gestation. No corpus luteum was seen projecting above the surface in the left ovary, but this does not mean that there may not have been a corpus luteum deeper in this ovary. It does, however, signify that the corpus luteum of pregnancy was not of normal size, because such a corpus luteum is usually about 20 mm. in diameter, and this large mass can practically always be seen in an ovary of normal size. Most likely in this case the corpus luteum of pregnancy reached its maximum growth at the sixth or eighth week of pregnancy, and then retrogressed. Numerous sections of the ovary which contained the dermoid failed to show a corpus luteum. In fact, practically no ovarian tissue was found in the removed tumor except at the hilum. The entire ovary seemed to have been converted into a dermoid tumor. Even had the corpus luteum been removed, it is hardly likely that the pregnancy would have been interrupted, for if the corpus luteum is removed after the eighth or tenth week of gestation there is practically no effect on the pregnancy. This is most likely due to the fact that by this time the placenta has taken over the function of maintaining the nidation of the ovum, which function the corpus luteum possesses during the first few weeks of pregnancy.

While removal of the corpus luteum after the eighth or tenth week of pregnancy may not interrupt pregnancy, an operation on the ovaries performed at a vulnerable time may cause an abortion whether or not the removed ovary contains the corpus luteum of pregnancy. This vulnerable period is the time a patient would menstruate if she were not pregnant. Hence when we decide to operate during pregnancy we should select, if we can, a time which would correspond with the intermenstrual period were the patient not pregnant. In our case the patient's menses would have occurred November 7, December 10 and January 12. The operation was performed on January 3, which corresponds to the intermenstrual period.

Of the utmost consequence in the avoidance of interrupting pregnancy is the gentle manipu-

lation of the uterus. The latter organ should be touched only when absolutely necessary and then with utmost care. Squeezing and pulling the uterus favor abortion.

Another important factor in the prevention of abortion following an operation is the administration of sedatives like morphin and codein for a few days after the operation. This medication has a tendency to allay the irritability of the uterus. No laxative should be given for a few days. On the fourth day an ounce of mineral oil should be administered three times and in the evening about 4 oz. of olive oil should be inserted into the rectum, to be retained. The following morning a soap suds enema should be given.

In performing this operation on our patient a Pfannenstiel incision was employed first, because it is much neater, and second because there is much less likelihood of the development of a hernia. This is important when we consider that the abdominal wall is going to stretch all through pregnancy and that labor will increase somewhat the burden of the scar.

Case 3. Mrs. I. L., a primipara, aged 22, complained bitterly of severe backache when first seen on the gynecological service at the Cook County Hospital on October 22. She had had backache for about two years, but during the last few weeks it was almost unbearable and codein was the only drug which gave partial relief. The general examination was negative. Vaginal examination revealed a nulliparous outlet. There were definite Chadwick and Goodell signs and the cervix was high up behind the symphysis. The corpus was the size of a nine to ten weeks' pregnancy, acutely retroflexed and very soft. The adnexa felt normal. An attempt to elevate the uterus caused excruciating pain. The patient was placed in the knee-chest position and another attempt made to change the position of the uterus. The only thing accomplished was to give the patient a great deal of pain. In spite of palliative measures, the pain persistently became worse and the retroflexion remained. An operation, therefore, seemed justified. On November 16 the abdomen was opened and an acutely retroflexed uterus the size of a three months' pregnancy was seen. It was very soft and markedly hyperemic, as were also both fallopian tubes. Both ovaries were normal, and a small cystic corpus luteum was seen in the left ovary. There were a few adhesions between the uterus and the culdesac. These were released and a modified Gilliam suspension of the round ligaments was performed. The patient was given sedatives for a few days following the operation, and after an uncomplicated recovery left the hospital November 26. The backache disappeared completely after the operation. When seen in February the patient was feeling very well and the uterus was the size of a six months' preg-

nancy. The patient could not be traced after this examination.

Discussion: It is very seldom that one must elevate a pregnant uterus by operation, because a pessary is usually successful in relieving the symptoms caused by retroversion and retroflexion of a pregnant uterus. This is the first operation of this kind during pregnancy that I have performed. There was justification for the operation because of the increasing severity of the backache which could not be relieved by non-operative procedures, and which seemed certainly to be due to the adherent, retroflexed, pregnant uterus. The relief experienced after the operation was a comfort not only to the patient but also to my own conscience. Whether the uterus would have risen out of the pelvis of its own accord and thus brought about relief is hard to say, but probably not, because there were adhesions between the uterus and the culdesac. Furthermore, the patient had to be relieved of her pain.

Case 4. Mrs. A. R., aged 21, was admitted to the Chicago Lying-in Hospital, January 3, 1929, because of abdominal cramps. The important item in the past history was that on two occasions the patient had typical attacks of appendicitis, and was sent to a hospital but on neither occasion was an operation performed. The patient's last menstrual period had begun May 20, 1928. The day before admission to the hospital she had cramps in the abdomen and vomited once. Because of this a physician was summoned and he sent her to the hospital believing that she was in labor. On admission at 8:15 p. m. the patient was having cramp-like pains every five minutes, but she was fairly comfortable until about 12:30 a. m. At this time the patient complained of generalized pain all over the abdomen but most marked in the right lower quadrant. She vomited once in the hospital. At about 2 p. m. she was suddenly relieved of her severe pain but a dull ache persisted in the right lower quadrant. Physical examination of the head, neck and chest were negative. On abdominal examination there was generalized tenderness all over, but mostly on the right side. The entire abdominal wall fairly rigid and movement of the thighs accentuated the pain on the right side. The uterus was the size of a $7\frac{1}{2}$ -8 months' pregnancy and contracted at regular intervals.

The fetal heart tones were 180 per minute and regular. Rectal examinations revealed the cervix to be effaced and dilated 3 cm. and the head was 1 cm. above the ischial spines. The temperature was 100° F. and the pulse rate was 124. The white blood cell count was 16,400, the red cell count was 3,500,000, the hemoglobin 90% and the sedimentation time only 35 minutes. A diagnosis of acute appendicitis was made and Dr. M. Parker and I operated on the patient. A much higher

incision than the usual McBurney was made because the pregnant uterus displaces the cecum and appendix and also covers these organs. The appendix on exposure was found to be gangrenous and perforated, and an acute peritonitis was present. The appendix was removed and the abdominal wall closed without drainage.

The patient was given a few hypodermics of morphin and was very comfortable the night following the operation. In the morning, however, there was complete dilatation of the cervix and the baby was delivered by means of an easy low forceps operation. The child, which weighed 1,940 gm. (4 lb. 4 oz.), died a few hours later.

The patient made a speedy and uneventful recovery and was discharged from the hospital eleven days after the operation. The wound healed per primum and the highest temperature after the operation was 100.3° F.

Discussion: This patient had twice previously been taken to a hospital because of attacks of acute appendicitis and she was sent home without being operated upon. Her physician did not tell her why he did not operate. When she was admitted to the hospital under our care, she was in active labor and the interne who first saw her thought she had an abruptio placentae. However, a more thorough examination made the diagnosis of acute appendicitis obvious. The fever, the tachycardia, the vomiting, the abdominal tenderness and rigidity, the low sedimentation rate and the history of previous attacks all helped to make the diagnosis. The operation was technically difficult because of the large pregnant uterus. We operated during labor and in spite of large doses of morphin, the labor progressed and the child was delivered without any trouble. We could not determine definitely whether the attack of appendicitis and peritonitis preceded the onset of labor or vice versa, but believe the former to be the more likely. The peritoneal inflammation probably irritated the uterus to contract. It was fortunate that our patient recovered because the mortality among pregnant women and women in labor who have acute appendicitis and peritonitis is very high.

Case 5. Mrs. M. A., a tertipara aged thirty-one, complained of severe pain in the vagina and lower abdomen during the sixth month of her third pregnancy. On examination, a cyst about 4x3x3 cm. was found within the posterior vaginal wall situated in the midline about 4 cm. from the fourchette. The cyst was removed and the patient's recovery was uneventful. After the operation all her symptoms disappeared miraculously. The pregnancy progressed normally and at the time of labor,

on February 21, I performed an extensive plastic operation on the perineum and rectocele, because the patient had a large cystocele and an old third degree laceration. The puerperium was uncomplicated.

Discussion: Not much need be said concerning this case. The removal of the vaginal cyst was a minor operation which could not have any effect on the pregnancy. The only danger was that of infection, but this did not occur. Why the removal of this cyst caused the sudden disappearance of all of the patient's symptoms is hard to say unless the effect on the psyche played an important part.

Case 6. Mrs. W. S., a primipara aged thirty-two, came to see me on September 24, saying she had had her last menstrual period June 22. From the point of view of our present discussion the only important finding was a friable, bleeding polyp about 4x2x2 cm. which projected from the cervical canal. The polyp was removed with a nasal tip cautery. There was no bleeding after this and the pregnancy continued to term. The child was delivered by low forceps and examination of the cervix showed no abnormalities. The puerperium was normal.

Case 7. Mrs. M. G., a primipara aged nineteen, was first seen on March 17, when she was in her sixth month of pregnancy. Of interest to us was the fact that she had condylomata on the vulva, in the vagina, and on the cervix. Silk ligatures were placed around the condylomata on the vulva and in the vagina, but those on the cervix were removed with the cautery. The pregnancy continued uninterrupted. Delivery was accomplished at term with low forceps and the puerperium was normal.

Discussion: Cases 6 and 7 may be discussed together. At first glance it would seem that a cervical polyp is a harmless thing and that the removal of a polyp would entail no difficulties or dangers. While this is essentially true in the nonpregnant state, it is nevertheless hazardous at times to remove a polyp during pregnancy. In support of this contention the fatal case of Heidler might be cited. (Archiv für Gynäkologie 1924, cxxi). Heidler strongly counsels against any manipulation of the cervix during pregnancy. In both of my cases the puerperium was afebrile and undisturbed, and in both cases the cervix after delivery appeared normal in every way.

SUMMARY

In this paper the question of pelvic and abdominal operations during pregnancy is discussed. Illustrative cases of operations for the following conditions are cited: partial stenosis of the vagina, dermoid cyst of the ovary, persistent retroflexion of the gravid uterus, perforative appendi-

citis with peritonitis, vaginal cyst and cervical polyps.

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DISCUSSION

Dr. O. H. Crist, Danville: We are fortunate, I think, in being situated as we are so near a medical center as Chicago, from which place such a vast supply of material comes forth and from which we can get such papers as Dr. Greenhill presented. I appreciate it.

I think we are familiar with the fact that during pregnancy we operate only in emergency and on rare occasions. The question is: what constitutes an emergency? Here is where the personal element and the personal experience act as the deciding factors. I presume that we are fairly well agreed that the ordinary operation performed under ordinary conditions and performed with delicate care and precision can be done with safety in the pregnant woman, and yet there is hardly a man who would rather not operate on the pregnant woman. There are some disadvantages and some dangers in operating on this class of women. In the first place, infections do not go well with pregnancy. It is far more necessary that the diagnosis be made early and that operation be made early where there is infection. Peritonitis spreads more rapidly in pregnant cases. There is weakened resistance to infection in pregnancy and weakened reaction. There is less likelihood of protective adhesions than in the non-pregnant woman. Drainage is less efficient. The mortality, which may well be classed as the mortality of delay, is somewhat greater. In this class of cases early diagnosis and early operation are very desirable and very necessary.

A few general rules may be laid down for pregnant patients. First, the earlier the pregnancy the safer the operation both as to life and the interruption of pregnancy. Also the necessity of early diagnosis. Many acute conditions are hard to diagnose with the association of pregnancy. Mature judgment and skill are necessary in making these diagnoses. The mortality rate is higher and in suppurative cases is much higher. One group of cases is reported in which the mortality rate is thirty per cent. for the mother and forty per cent. for the child including abortions.

Abortions are prevented, first, by operating early in pregnancy, second, by operating before infection has taken place, third, by little manipulation of the uterus, and fourth, by the liberal use of morphin as was brought out in the paper. Do not wait for pain to give morphin. Keep the patient well under the influence of the drug for the first few days.

Some of the conditions requiring operation are tumors of the pelvis. These may be either myomata or ovarian tumors. Myomata exist more frequently than is generally supposed. Fibroids rarely obstruct, and may interfere with pregnancy but little. If the fibroid be in the cervix or involves the lower uterine segment, it is drawn up by lifting out of the pelvis either by manipulation or by the necessary contractions of the

uterus. The pedunculated type may become twisted and by cutting off the circulation may create an acute abdominal condition requiring operation. This should be done early. Ovarian cysts constitute a menace. They are more apt to obstruct labor than fibroids. They cannot be lifted out of the pelvis as well. An ovarian tumor recognized early in pregnancy is probably best removed. This can be done with safety and labor is undisturbed. If it is discovered later in pregnancy, experience and judgment must decide the treatment. The pedunculated type of tumor is not apt to interfere with pregnancy or labor unless they become strangulated. If so, they are treated as an acute condition and operated on as though no pregnancy exists. I have had in my experience a pedunculated dermoid cyst, which had been noted as a lump in the abdomen for years. When the patient was two months pregnant the first time, torsion of the pedicle caused acute symptoms which called for operation. The tumor was removed and at operation a dermoid cyst of the opposite ovary was discovered. Each of these tumors was the size of a grapefruit. It was not pedunculated but involved the entire ovary. This one was also removed. The pregnancy was not disturbed and a live baby was delivered in due time.

Among the conditions requiring operation during pregnancy might be mentioned extrauterine pregnancy. There is no argument on this subject. Extrauterine pregnancy is operated on as though no pregnancy exists. It is operated on when diagnosed before or after rupture.

I can imagine another non-inflammatory condition requiring operation, namely, retroverted and incarcerated uterus. Operation is then permissible and advisable if manipulation has failed to replace the uterus to its normal position.

Among the inflammatory conditions requiring operation, the most common is appendicitis. I think it is well agreed that if diagnosed early it should be removed no matter what the stage of pregnancy. If not seen or diagnosed early or if rupture has taken place or if the situation has already developed to a serious point, it is a question in my mind what to do. If there is definite evidence of suppuration, abortion is almost sure to follow either from the infection or the extension of the infection into the uterus. In the second place, it is difficult to drain the peritoneal cavity. The man who claims to drain the peritoneal cavity is deceived. I would rather give the patient a chance undisturbed, and I realize there are certain advocates of drainage who will not agree with me.

Pyosalpinx is a condition which becomes a serious one in pregnancy. It is probably best removed when diagnosed. It can be removed in the early months of pregnancy without disturbance and without trouble. If it is diagnosed late in pregnancy, it may be an indication for cesarean section. In my opinion many of the puerperal infections are caused by pus tubes or other infections which already exist and which labor excites and spreads through the peritoneal cavity.

Pelvic abscess should be opened the same as if no

pregnancy exists, being careful not to manipulate or disturb the uterus.

Operations on conditions outside the pelvis are done without hesitation. I was interested in Dr. Greenhill's remarks on the cautery. I have held the opinion that the cautery during pregnancy would be dangerous and would lead to the interruption of pregnancy. I am glad to hear that in his cases it has not interrupted pregnancy.

Dr. J. P. Greenhill, Chicago (closing the discussion): I thought I would not disagree with anything Dr. Crist said, but I have to differ with him in two statements. First, is his advocacy of early operation involving the ovaries. As mentioned in the paper, when we operate too early, abortion may result, especially if the corpus luteum is injured or removed. It is best to wait until after the eighth or tenth week if possible, to operate on the genitalia. However, operations before this time are occasionally successful. For example, at the present time I have in the hospital a patient from whom, eleven days ago, I removed a dermoid cyst of the ovary but not the one containing the corpus luteum. She was not more than seven weeks pregnant and her gestation is still going on.

Secondly, I disagree with Dr. Crist when he suggests letting patients with appendicitis alone. I think appendicitis is a surgical condition and the pregnancy should be disregarded. The patient should be operated upon, but not with the idea of drainage. The peritoneum takes care of most of the infection which is present, and there is no necessity for drainage. We should remove the appendix in cases of acute appendicitis as soon as possible after the diagnosis is made. I cannot see the logic of not operating on patients with appendicitis, and then insisting upon operation for pus tubes which are found during pregnancy. Gynecologists usually leave acute pus tubes alone, and in pregnancy practically all the cases of salpingitis and pyosalpinx are acute. At the Chicago Lying-in Hospital I do not know of a single case where pus tubes were removed during pregnancy.

I was glad to hear Dr. Crist say he favors a policy of conservatism when fibroids are present but not with ovarian tumors. Fibroids usually give no trouble during pregnancy, labor or the puerperium. Ovarian cysts usually do. Therefore, it is best to remove an ovarian cyst which has attained the size of a tennis ball or larger during pregnancy, while most fibroids can be left alone. Usually fibroids grow upward with the uterus and even cervical fibroids frequently rise out of the pelvis and do not produce dystocia. Many patients complain of vaginal bleeding and it seems as though there is a placenta previa. Not infrequently if we make a careful physical examination we find the cause of this bleeding to be the cervix. In these cases I do not hesitate to use the electric cautery and I have had good results. I have had only one case of dystocia from the scars which resulted and I recall at least six patients in whom I have cauterized the cervix during pregnancy because of bleeding from the cervix.

RADIATION THERAPY IN NON-MALIGNANT CONDITIONS*

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Owing to the fact that the medical profession is ever on the alert to find any advanced method of treatment which will give relief more promptly and satisfactorily; and being convinced that radiology has not received full recognition not alone as to its great value in accurate diagnosis of pathological conditions, but of its use in the treatment of many diseases which have not responded to other means of therapy, the writer consented to present a paper to call to your attention briefly a few of the many conditions to which the radiologist has contributed relief to the afflicted.

Radiation therapy which includes radium, x-ray and ultra-violet, is only in its infancy of application and we are daily finding new and valuable uses, and every physician should have a knowledge of its possibilities that he may advise his patients honestly and intelligently. Physicists and electrical engineers have enabled us to administer radiation with precision as we can now accurately determine the dosage.

Radiology has probably been the means of greater advance in medical science within the past ten years than any other branch of study. The practice of radiology is a specialized science and should be practiced only by physicians with a well grounded education in medicine, especially anatomy, physiology, histology, pathology, chemistry and physics. We do not claim that radiology has the key to health which can unlock the door and reveal the great mystery of human ailments but we do say, without fear of successful contradiction that we have been able to accomplish some truly marvelous results in accuracy of diagnosis which greatly simplifies the treatment and contributes to the relief of the suffering.

The object of this paper is primarily to call to your attention the fact that many conditions which heretofore have stubbornly failed to yield to any form of medication may be relieved by radiation. We must ever be mindful of the fact that so-called minor ailments are probably in the aggregate the cause of more pain and incapacity

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than the more serious diseases, but have been neglected because of lack of some satisfactory treatment.

Embryology: Cell activity is influenced by radiation depending upon the time in regard to its stage of development and the dosage. During cell division radiation has a most marked effect; small doses may stimulate division while larger doses retard or destroy the cell. MacKee speaking of *plant* life says, "It is interesting though not surprising to know that the effect of x-ray and radium in the vegetable is similar to that in the animal kingdom. the result depending on the dose and the stage of development. It is possible to stimulate growth, to retard growth, to prevent fertilization and to affect complete arrest of development just as in animal life."

The effect of radiation is chemical, bio-chemical and biological.

That radiation produces changes in the living tissues is a proven fact and both organic and inorganic compounds undergo change through the process of ionization.

Gaseous compounds are decomposed by the process of oxidation. Secretions are altered in composition and may be increased or decreased by radiation. This is especially demonstrated by the checking of the secretion of a too active thyroid in case of thyrotoxicosis. Lymphoid tissue may be made to shrink and disappear.

Pain: That pain may be relieved by radiation in many cases is an established fact. Many patients will attest to the fact that they have been partially if not completely relieved within a few hours. In the writer's experience a surgeon came for examination of lumbar spine to determine the cause of his backache. Films were made showing arthritic changes in the vertebrae. The second day following he returned to the office for radiation stating that x-ray had given him almost complete relief.

Pruritis, local and generalized, may be controlled by mild x-ray exposure and the ease of application in otherwise inaccessible areas such as the anus and vagina especially commends its use. Within a few hours there will be almost if not complete disappearance of the itching.

Lymphangitis: There is no treatment known at the present time which will give the same relief with complete disappearance of the glands.

lar infection and enlargement as does radiation in infections of the lymph glands, especially those of such frequent occurrence as we see in childhood. This treatment applies equally well whether the infection be of the tuberculous or chronic streptococcus type. Treatments must not be too rapidly pushed, but fractional doses administered. We expect relief and seldom is there a recurrence.

"Great oaks from little acorns grow; great aches from little toe corns grow." MacKee in his most recent work, says of corns, callus and pathological hypertrophies. These lesions are characterized by acanthosis and particularly hyperkeratoses, a protective reaction to traumatism. Presumably the increased activity is in the lower part of the rete and in the basal cell layer. Irradiation prevents further cell multiplication and the horny layers exfoliate. If in the meantime the local cause has been removed there will be no further development. It even seems possible to so modify the epidermis that it ceases to react to slight pressure or irritation. It has been my privilege to treat many cases of corns, calluses, and warts, including plantar warts, and the relief has been most prompt and within a short time the skin assumes a normal condition.

Dermatitis Seborrheica: Within the past few months two cases of extensive involvement, the entire body being affected, have come under my care for treatment. While the subjective symptoms are comparatively mild, itching being the chief complaints, it is none the less annoying.

This you will recall is an inflammatory disease of the skin with reddened scaly patches involving usually the hairy portions of skin, but is frequently, as in the cases reported here, distributed more or less over the entire body, beginning in the scalp and rapidly spreading. The scaling and oozing is most annoying to the patient.

The treatment of these cases has been entirely confined to body radiation with the mercury-quartz lamp beginning with three minute exposures at thirty-six inch skin distance, both front and back. Almost from the first application there was quick response and we have been surprised at the rapidity of recovery. This method of treatment is far more satisfactory for the comfort of the patient than any other for

we must recognize the annoyance of various salves, paste and solutions. The quick response, ease of application and lack of annoyance to patient, fully justify this treatment.

Herpes Zoster seems to be the result of an infection which produces inflammation of the posterior root ganglion of the spinal nerve or may be precipitated as a result of injury to the nerve. The exact nature of the infection is not yet known, but Rosenow produced it experimentally by injection of streptococcus. An acute inflammatory disease of the skin with a vesicular eruption arranged along the course of a nerve. This is usually a very painful lesion with a slight elevation of temperature, headache and general depression; not infrequently do we find some glandular enlargement. The writer has found that radiation promptly relieves pain. The average case is given $\frac{1}{3}$ skin dose over the spine with 3M.M. aluminum filter, repeated if necessary, on second or third day, following. Quartz lamp treatments are started at once, general body radiation. The relief is prompt, the eruption dries up and disappears in a few days.

Acne Rosacea: An inflammatory lesion of the skin usually limited to the nose and face with hyperemia, increase and dilatation of the capillaries. This condition is very annoying although the subjective symptoms are slight. When untreated it has a tendency to grow progressively worse and disfiguring as a result of hypertrophic changes. This condition will respond to radiation and usually the face is left clean and smooth after mild filtered doses at intervals of ten to twenty-one days. Complete relief will follow in from two to ten treatments.

Acne Vulgaris is one of the frequent skin diseases which we are called upon to treat, and yet from my experience in general practice it has been the most stubborn, and we have been prone to treat indifferently or not at all with the idea that it would disappear spontaneously in early adult life.

The disease involving the pilosebaceous structures with the formation of nodules, papules, and pustules while primarily on the face also involves frequently the neck, back and chest. Apparently the result of acne bacillus and of multiple infection including the staphylococcus. We may expect very prompt response.

This is one of the most annoying and distress-

ing diseases with which the young adult has to contend as it appears on the face of boys and girls at an age when they are most sensitive about their appearance. We must not push too vigorously the radiation, but believe the best results are obtained by fractional doses ten days to three weeks apart. Pustules are best treated by desiccation, which though painful, requires only a fractional part of a second for complete destruction and effective sterilization.

With x-ray treatments great care should be exercised, as the response in two apparently identical cases may not be the same, but with carefully regulated dosage relief is most certain.

Ivy Poisoning: We should never fail to advise the actinic ray treatment in ivy poisoning as very prompt relief and cure is effected in the cases we have treated and the results have been most satisfactory.

Psoriasis: We have been able to give some measure of relief in this condition, but without exception there have been recurrences and it seems doubtful if we should promise any permanent result.

Onychitis, which we recognize as a painful infection of the matrix or folds of the nail, has not failed in the writer's experience, which is however, somewhat limited, to respond satisfactorily to mild x-ray treatments.

Erysipelas: It has been my privilege to treat a few cases of erysipelas. The mercury-quartz lamp was used and marked improvement was noted within twenty-four hours and recovery was apparently much hastened.

Keloid: Radiation has proven so satisfactory in keloid that it seems unnecessary to any more than mention the fact. They may be removed by surgery or by carbon dioxide snow, but recurrences are common, while this is not the case when treated by radiation.

We may say also one great advantage of radiation is lack of pain or discomfort.

Tinea Barbae is very responsive to radiation either by x-ray or radium.

Lichen Planus: The writer has had very satisfactory results in this condition of the chronic localized type. The literature makes frequent reports of the successful results in the acute type. It appears that radiology offers more rapid response than does medication.

Nevus Vasculosus: The use of x-ray and

radium is so satisfactory and complete removal so sure and free from the possibilities of infection we are of the opinion no other treatment should be considered. The writer has been especially pleased with the result of radiation therapy of lesion on a child nine months of age situated above and involving upper eyelid which interfered with the opening of the eye. The lesion could scarcely be seen at the end of a year.

Carbuncles: This painful and dangerous disease is robbed of many of its horrors. Pain is relieved and recovery hastened by x-ray. We have treated more than 200 cases within the past few years; many of which would have had a fatal termination, we believe, had it not been for the relief of radiation. Drainage must be established and free discharge of pus permitted.

A few cases of deep seated infections have been delayed in recovery and the pain more severe and prolonged than would have been the case had we insisted on early incision.

Usually the patient will be greatly relieved of pain within six to twenty-four hours; drainage is hastened, the numerous small openings coalesce and recovery hastened.

Thyrototoxicosis: Several years ago the writer presented a paper at the meeting of the Western Roentgen Society at Cleveland in which the claim was made that toxic goiter was essentially a disease for the radiologist and that surgery would not give the same percentage of cures as radiation therapy.

I have no reason to retract this statement nor to in any way modify it, except to say, after several years of observation of many, even severe types, that it is not a surgical disease, but essentially one for radiation treatment. Almost without exception at the end of six weeks the patient will say without hesitation that improvement is evident and metabolism tests will show steady but decided relief.

We claim that radiation presents the following advantages:

Hospitalization is unnecessary and the working patient may carry on his usual work, although it would be desirable and recovery hastened by confining the patient to bed. The administration of a general or local anesthetic is avoided, thus eliminating this possible hazard.

We must admit that an operation of this char-

acter must be attended by some danger, and shock is unavoidable. With radiation there is no shock or danger to life.

It is very apparent that shock, fear, hemorrhage, hospitalization with its attendant expense, the annoyance of dressings, etc., is of no advantage to a patient suffering from a toxic thyroid. These are all eliminated by radiation treatment.

Vernal Conjunctivitis: The writer has now under observation two cases of vernal conjunctivitis in which we have used radium and the relief afforded has been most gratifying, and I believe complete relief will follow.

The writer has treated chorea, chronic ulcers, endometritis, ringworm, tuberculous laryngitis, but it is apparent that this paper cannot deal with all the pathological conditions which respond to radiation therapy.

MacKee says there are more than eighty diseases which are successfully treated by x-ray and radium.

Pusey has said "It is in fact hardly too much to state that roentgen therapy is the most widely useful addition to the treatment of skin diseases that has been made."

We are justified in using x-ray in any case of streptococcus or staphylococcus infection.

DISCUSSION

Dr. Thomas D. Cantrell (Bloomington): I had a patient come to me from fifty miles distant, a young man with an ulceration of the face. He was about to graduate and was in no condition to graduate. The doctor brought him over one evening. I took him to the office and examined him and gave him one treatment with ultra-violet, I think about five minutes in time. The doctor said, "When do you want to see him again?" I told him I didn't want to see him again, that he was cured. That has been my experience with impetigo.

The first experience was in a hospital where an infant became infected from the common dressing table. Every infant in the hospital was infected with impetigo contagiosa. I ordered the dressing table eliminated and one treatment given the baby over the entire body. The whole thing was eradicated from the hospital inside of a week's time.

It is very important in regard to calluses and corns. The x-ray is a nonessential there, because with a little patience it can be as well done with the ultra-violet. It ceases to form under the ultra-violet. I am in favor of using the ultra-violet wherever it can be used, with the exclusion of the x-ray, if possible, because I feel there is never an x-ray treatment given without more or less detriment following, as is true with most of our medical and surgical procedures. But the ultra-violet

seems to be constructive and not destructive. I feel it is perfectly safe in safe hands.

Dr. I. S. Trostler, Chicago: While it is a fact that Dr. Chapin has not given us anything new, I want to say this is the kind of a paper we want presented here and published in our state journal so that the general practitioner may get it. That is the type of paper the general men should read and the only way they will get it. They do not come to our meetings, because they feel they will get the paper in the journal of the State Medical Society.

I want to thank Dr. Chapin for presenting this paper.

CONTROL OF MOSQUITOES IN THE PREVENTION OF MALARIA*

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The history of the tremendous amount of work leading up to the discovery at the close of the last century, of the cause and prevention of malaria is well known to the medical profession. It is also well known that the period immediately following the World War marked the beginning of extensive malaria control activities throughout the United States, especially in those sections where malaria has long been and continues to be a distressing economic problem. In the brief ten years that have passed tremendous strides have been taken in this line of endeavor and the literature on the subject has become so voluminous that a catalogued index of the numerous papers, treatises and reports would in itself constitute a large sized volume.

It is not the province of this paper to go into a general discussion of the control of mosquitoes in the prevention of malaria because the facts are quite generally known, but rather to point out the present status of malaria in Illinois and to outline the steps which have been taken in this State to eliminate the disease.

History of Malaria in Illinois. There was a time 50 to 60 years ago when malaria presented a very serious problem in practically every county in the State. Historical records prove without a doubt that the disease was present in pandemic form in the northern as well as the southern counties, being more prevalent perhaps in the counties bordering or traversed by the

larger rivers along which extensive swamps and marshes prevailed.

Gradually as the population of the State increased and the agricultural industry became more important, there was a movement toward the reclamation of all wet and swampy lands for agricultural purposes. The significance of this movement which has persisted only for about 50 years is reflected by the fact that in the entire State exclusive of the Ohio, Cache, Saline and Big Muddy River watersheds which lie in the south portion of the State, 78 per cent. of all lands originally in need of drainage for agricultural purposes have been drained. It is an interesting observation to note that in the Ohio, Cache, Saline and Big Muddy River watersheds malaria is still regarded as somewhat prevalent, only 34 per cent. of the lands originally in need of drainage have been drained. The large scale drainage operations carried on in this State during the past 50 years have certainly resulted in the virtual elimination of the disease in all except the southern counties. Even in the southern counties the disease has been reduced so greatly that the influence of drainage work upon the disease incidence is apparent. The farmer, interested in greater production and the reclamation of his swamp lands for agricultural purposes, has, unknowingly probably, exerted the greatest possible influence in reducing the incidence of malaria in this State.

If drainage has been the great factor in reducing malaria in the State we would expect to find in the Sections which have not been improved and which consequently have retained the physical aspects of 50 years ago, that malarial conditions of the present simulate the conditions of 50 years ago. In this connection it is interesting to point out briefly the results of a comprehensive malarial investigation carried on by the State Department of Public Health in 1925 in 7 of the southernmost counties. The results of this survey plainly show that in certain unimproved sections where conditions simulate those of the past malaria rates are excessively high and probably are some where near the rates that prevailed many years ago.

Incidence and Distribution Characteristics of Malaria in Rural Areas of Southern Illinois. The survey was begun in January of 1925 and

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continued through March, 1925. The method employed for making the individual diagnoses which make up the mass diagnosis, was that of examination of children for the presence of enlarged spleen. The elicitation of histories of malaria in individuals, although open to many fallacies, was relied upon to some extent. The work was at all times under the direction of Dr. H. P. Carr of the International Health Board. The school children of 104 schools in seven counties were examined for enlarged spleens and histories taken.

Before passing to the malarial indices as determined by the survey it is well to consider briefly the two general types of topography that prevail in southern Illinois. Those familiar with the section will recall that a spur of the Ozarks extends laterally across the State just south of Carbondale. In this "Ozarkian Uplift" the topography is quite rugged. This rugged territory prevails throughout Union County and about half-way down into Alexander County. Paralleling the Ohio and Mississippi Rivers are extensive flats and bottom lands, some of which are substantially unchanged from their condition of 50 years ago. These bottom lands extend some distance along the tributaries to the Ohio and Mississippi Rivers into the rugged portions of the counties. The two general types of topography in the section are therefore the rugged uplands or hill sections and the low flat bottom lands or swamp sections. It is in some portions of the swamp sections that physical characteristics have remained practically unaltered for many years.

A summary of the spleen data from schools attended by pupils residing in the uplands or hill sections shows that out of 569 spleen examinations only 21 or 3.7 per cent. were found positive. Out of 914 spleen examinations made upon pupils residing in the low swampy sections, 134 or 14.6 per cent. were found positive. The results of the histories are equally interesting. The history incidence of malaria among pupils residing in the uplands was found to be 17.4 per cent. as compared to 25.1 per cent. for the pupils residing in the bottom sections.

Based upon spleen rates of 3.7 per cent. for the hill sections and 14.6 per cent. for the bottom sections, the data not only indicate the ex-

ceedingly greater prevalence of malaria in the bottom sections but also that a significant and positive incidence of malaria still exists in the hill sections, and that compared to the incidence prevailing in the remaining counties of the State, the malaria problem of the southern counties is one of major sanitary importance.

The spot maps which were worked out in connection with the survey revealed some interesting and important information regarding malaria distribution. From the foregoing brief analysis it is seen that the severe malaria problem of southern Illinois lies in the great river valleys, the Mississippi, Ohio, Wabash, Cache, Saline and Big Muddy. When the spot maps covering this area were studied it was found that the infection was not evenly distributed through the area, but that the cases tended to group themselves in small foci. As an example of the intensity of the disease in certain localized areas mention might be made of the spleen rates determined for the following schools:

School	Location	Per cent. enlarged spleens
Howardton	Jackson County—Bottom	Section... 23.8
East	Jackson County—Bottom	Section... 33.3
Grimsby	Jackson County—Bottom	Section... 27.8
Crain	Jackson County—Bottom	Section... 30.7
Logan	Jackson County—Bottom	Section... 33.3
Neunert	Jackson County—Bottom	Section... 45.4
E. Cape Girardeau	Alexander County—Bottom	Section. 36.3
Lower Bend	Alexander County—Bottom	Section. 71.5

Certainly in the Lower Bend region of Alexander County present conditions are not greatly unlike those of the past and it is in this region that about 75 per cent. of the people still have malaria.

The focusing of malaria cases about isolated points suggest that even in Southern Illinois where malaria is still considered to be somewhat of a problem, the solution may not be at all difficult and may easily be brought about by concentration of remedial measures at a few single points.

Mosquito Control Measures. In Illinois there is only one species of mosquito that appears of much consequence insofar as the transmission of malaria is concerned. This is *Anopheles quadrimaculatus* and is the same mosquito that is so prevalent in the south. Three or four other kinds of *Anopheles* are native to Illinois as for example *punctipennis* and *crucians* but none of these appear to play much part in the transmis-

sion of malaria. The *quadrimaculatus* mosquito is a preferential mosquito, universally adapted to one particular type of breeding place. If this type of breeding place is not present in a community malaria is quite apt to be absent. The malaria bearing mosquito requires comparatively fresh water with plenty of marginal vegetation and surface debris to afford protection. An ideal *quadrimaculatus* breeding place is a cypress swamp. Small pools with margins heavily overgrown with large grasses, old bayous left in the neighborhood of changing streams, or the slowly flowing waters of artificial drainage ditches such as exist in the Mississippi bottom lands of Southern Illinois, all are typical *quadrimaculatus* breeding places.

The flight range of *quadrimaculatus* is about one mile. Consequently in any given area over which malaria mosquito control is sought, if all *quadrimaculatus* breeding places within one mile of the area to be controlled are eliminated or placed under control, effective malaria prevention results.

There are only a few simple anti-mosquito measures that can be effectively employed in mosquito control work. The first of these of course is drainage. By removing the water, mosquito breeding is positively destroyed. Oiling is effective but is not so positive, especially in places where there is considerable aquatic growths or surface debris to prevent the proper spreading of the oil films. Regrading of ditches and streams so as to remove pot-holes and produce a free flow of water is also effective. Top water minnows are natural enemies of mosquito larvae and when they are present in a pond or stream in sufficient numbers they will keep the mosquito population pretty well suppressed. The stocking of ponds and other breeding places with these top-water minnows is therefore an important method of control. Dusting water surfaces with Paris green and dust is instrumental in reducing Anopheline breeding. Screening measures to keep the mosquito away from sick persons and infected mosquitoes away from well persons are important. And lastly, might be mentioned "swatting." Le Prince has found that after a female mosquito takes her blood meal she usually rests for an hour or two afterwards. Consequently if a regular practice is made of swatting mosquitoes in the morning before break-

fast and in the evening after supper, following the periods when they have made their attacks, much good will be accomplished, and if the mosquito has become infected she will be killed before she has a chance to leave the premises.

Malaria Mosquito Control in Illinois.—Since 1922 there have been several effective mosquito control demonstrations in this State. In some of these demonstrations the control of malaria has been the primary consideration, although to obtain popular support for the work, the mosquito nuisance received equal consideration. The various projects which have developed in the last six years included demonstrations at Carbondale, Herrin, Belleville, West Frankfort, Murphysboro, Gorham, Ravinia Park and Des Plaines River area. Some of these projects were continued for one, two or three years and others were carried on for only one year. The demonstrations have resulted in the continuation of three of the projects on a permanent basis.

The Carbondale Project in 1922.—In 1922 the Lions Club of Carbondale financed a malaria-mosquito control campaign. This project will be described because it was the first project in the State, and because great care was taken in keeping an accurate record of the work. The project furnishes an excellent demonstration of how malaria can be reduced through the elimination of mosquitoes.

In 1921 there were by a house to house canvass, 267 cases of malaria in Carbondale, a city with a population of about 7,000. The physicians' estimates of cases for 1921 totalled 300.

The mosquito breeding places included about 60 acres of cattail swamps on the north side, a 40 acre lake on the south side, a number of small ponds, and about 6 miles of ditches and streams, all within mosquito flight distance of the city. The trouble was further augmented by an enormous number of rain barrels and open wells and cisterns.

Nine thousand feet of ditches to drain the cattail swamps were constructed by the use of dynamite in 15 days at the beginning of the season in 1922. The ditch had an average cross section of about 10 feet top width, 2 feet bottom width and 3½ feet deep. A path was first cleared through the cattails to facilitate the placing of dynamite. Holes were punched at intervals of 14 to 18 inches depending upon the character

and condition of the soil, and one-half pound sticks of 50 per cent. straight nitro-glycerin dynamite inserted to a depth of 16 to 22 inches, depending upon the desired grade. Only one stick was capped with an electric fuse, and when fired the entire line exploded.

By this means sections of the ditch 700 feet in length were constructed in a single blast. While the resulting ditch, of course, was not as smooth and neat as a dug ditch, it was constructed rapidly and the swamps were drained before the height of the mosquito season was reached, a condition which could not possibly have existed if hand labor or machinery had been employed.

The 40-acre lake on the south side of Carbondale was abundant with cattail growths and pond lilies in a number of small bays, and there was also a fine growth of grass around the edges, making it an ideal place for the breeding of *Anopheles* mosquitoes. The water level in the lake was dropped 18 inches by cutting the outlet spillway, and a great reduction in breeding was at once apparent. The bays were cleared of the cattails and pond lilies, and portions of the surface and the edges oiled through the season. A careful examination in September failed to find any breeding, when in May before the work started, as many as 200 larvae could be secured in a single dip with a small dipper.

The ditches and streams in the area were carefully regraded, rechanneled, cleared and kept in proper condition throughout the season for oiling. All ditches and other collections of water in the area were oiled each week. Frequent inspection showed that almost perfect control was established on natural breeding places.

The most troublesome part of the campaign was the control of rain-barrels and other man maintained breeding places. In June, out of 664 open wells and cisterns, mosquito breeding was found in 391. Of these wells and cisterns 584 were immediately stocked with *gambusia*. A later inspection of 60 wells and cisterns showed that the minnows were performing their work well, only two cisterns being found breeding, and the fish had apparently been removed from these.

The control of breeding in rain-barrels and tubs was accomplished by regular house-to-house inspections. In June, the first inspection showed 1,030 containers, 831 being rain-barrels and tubs, which were found breeding mosquitoes. The

second inspection in June caught 296 containers breeding. The third inspection caught breeding in 154 and the fourth inspection 206. On the fifth inspection every container in the city was oiled. On the sixth inspection only 19 containers were found with larvae. On the seventh inspection only 7 and on the eighth inspection only 11 were found to be breeding mosquitoes. By the height of the mosquito season, almost perfect control had been established.

The cost of the work was as follows:

Dynamite Ditching (Permanent work).....	\$1,200.00
Regrading Ditches	592.80
Ditch Maintenance	251.20
Oiling	447.48
Supplies and Incidentals.....	54.65
Fish Control	50.40
Inspections	202.00

Total.....\$2,798.53

Exclusive of the dynamite ditching, which was permanent work, the cost was \$1,598.53.

At the close of the season a house-to-house canvass was made to determine the number of malaria cases. Physicians' estimates were also secured. It was found by the house-to-house canvass that 19 cases existed during 1922 as compared to 267 which existed in 1921. By the physicians' estimates it was found that the work resulted in reducing malaria from about 300 cases in 1921 to 54 cases in 1922. The work was continued at Carbondale in the succeeding years with continued success and at a cost of approximately \$1,000 per year.

Permanent Arrangements for Mosquito Control.—Carbondale furnishes the striking example of a city that has enthusiastically carried on systematic mosquito control for the prevention of malaria and reduction of the mosquito nuisance for seven consecutive years. Two years ago the Carbondale Mosquito-Abatement District was organized under the provision of a new act of legislature which permits a municipality and surrounding territory to so organize and levy taxes for mosquito control purposes. This arrangement has put the work at Carbondale on a permanent basis.

In addition two other mosquito abatement districts have been organized and effective work is being carried out. These districts are the North Shore and DesPlaines River Valley Mosquito-Abatement Districts. The DesPlaines River District is exceptionally well organized and the work of that District is under the direction of an ex-

ceptionally competent, and experienced sanitary engineer.

With adequate provision for financing mosquito control projects now available the future of such work in Illinois seems well assured, especially for the built-up communities where malaria or mosquitoes constitute a problem.

For rural malaria control, in the southern counties, because of the focalized nature of the distribution of cases, it may be feasible to carry on a few relatively unimportant drainage operations and accomplish much good. But basically success in the prevention of malaria in rural districts will depend on educational measures which will bring about proper screening and simple protective measures and bring all of the cases of malaria under the care of the physician, so that the mosquitoes will no longer have access to infected persons.

DISCUSSION

Mr. J. Lyell Clarke, Sanitary Engineer, DesPlaines Valley Mosquito Abatement District, Riverside: Upon two occasions I have visited the site of the first permanent English settlement on the shores of this continent. I have read the history of the Jamestown settlement. This island site was chosen in order to protect the colonist from land attack by the Indians. Between the island and the peninsula is a large fresh water swamp. Malaria mosquitoes are there now and no doubt were there then. Half the colonists died during the first year. One of the old records states that the site was abandoned because of "epidemics" so that we may read between the lines that to this first English settlement the malaria mosquito was a greater potential enemy and a more deadly one than the savage.

In the report of the U. S. Department of Agriculture of 1910 there is a summary of drainage work accomplished since 1880. This report describes the reclamation of enormous swampy areas in the states of Iowa, Indiana, and Illinois, and attributes the decrease in malaria incidence to agricultural drainage. In support of this claim it gives the death rates from malaria in these states before and after drainage. The reduction in malaria is very striking.

It goes further: it gives the malaria death rates in the states along the Mississippi south of Cairo, to show that in this area, where very little drainage had been accomplished up to that time, malaria death rates remained about the same.

In Washington County, Mississippi, between 1915 and 1922, \$2,600,000 was spent for agricultural drainage. During that period malaria was reduced 56 per cent., bringing about a benefit to public health of over \$1,000,000.00.

It is thus evident that malaria control is a by-product of agricultural drainage. The question which confronts us now is whether or not we should rest complacently

and be contented to rely upon the slow process of agricultural drainage and better living conditions to rid Southern Illinois of malaria, or whether it would not be better to accelerate the downward trend of malaria by applying specific knowledge concerning the transmission of the disease, which is at hand and ready for use.

You have heard Mr. Dappert describe the conditions which exist in Southern Illinois. Malaria is not uniformly distributed over the entire area; it is spotty, a cluster of cases here and a cluster there. This holds true for both the hilly sections and the bottom lands. The only difference is that in the hills these foci of infection are farther apart.

Now that we know where malaria is and that it is kept going by one species of mosquito, and that that species breeds in ponds and that those ponds are always in flight range of the infected areas, would it not appear the problem is half solved? In any event the problem is clearly stated.

As I see it this is the formula. Try to form a picture in your mind. Malaria transmission consists of a chain of three links: two men and one mosquito. The first link is the sick man,—the chronic malaria carrier. The second link is the mosquito and the third link is the well man.

The most fragile link in this chain of transmission is the city bred malaria mosquito, and the strongest link is the rural bred malaria mosquito.

The mosquito is the same in both instances, the difference being that the cost of eliminating his breeding places is pro-rated over a greater number of persons.

In the Southern Illinois villages from 300 to 4,000 persons live on one square mile, and therefore, the cost of eliminating the breeding places ranges from one dollar per capita per year in the small villages to twenty-five cents or less in the larger villages. The mosquito link is, therefore, very weak. In the sparsely settled rural territory there are less than thirty persons per square mile and proportionately more mosquito breeding places, therefore, the cost of eliminating mosquitoes is very much greater per capita, about \$50.00 per capita, a prohibitive cost. The mosquito link here then is entirely too strong to break.

But there are two other links. There is the sick man link and the well man link. The family physician must hammer on this sick man link with his quinine chisel and his mallet of insistence.

The family physician can also attempt to break the other link, the well man link. This he has not tried to do in the past. The well man link must be broken by protecting him from the mosquito bite. There are two methods of breaking this link. One must be used in conjunction with the other. The farm house must be properly screened, windows, doors, and chimneys; but this is not enough: all mosquitoes which gain entrance, and many come in when doors are opened, must be killed before they leave the house. Few physicians and fewer laymen appreciate the value of swatting the mosquito which has entered the house. This mosquito is more apt to be infective than those outside. The

value of killing the mosquito was first recognized by Mr. LePrince and tried out by him in his work in the Panama Canal Zone. I quote here a statement from his work in the Canal Zone:

During 1909 a number of camps were located along the new line of the Panama Railroad. Four of these camps, with an aggregate population of 1200, were located along twelve miles of the road at intervals of three or four miles.

It would have been costly to attempt drainage and oiling operations of sufficient magnitude to protect all these camps from malaria and it was decided to house the employes in screened cars, and to carry out daily mosquito catching in all of them. The number of *Anopheles* caught in the cars, which were surrounded by mosquito breeding places, reached 1800 a week. The malaria incidence in these camps was but slightly above the incidence for the Canal Zone.

Another instance of the employment of this prophylactic measure under more favorable conditions occurred near Corazal. In this case the camps were remote from native habitation. In June, 1908, several hundred United States Marines were quartered for two months on Diablo Hill. During that period the malaria incidence among them averaged 14 per cent. a week. No mosquito work was done. Some cars in which railroad laborers lived were located at the foot of the hill. From the early part of May to the end of November in the rainy season, when malaria incidence is high on the Isthmus, only four cases of malaria occurred among the forty laborers occupying these cars, a weekly incidence of 0.3%.

Since then Mr. LePrince's experiment has been verified by many malarialogists. Swatting them is a very valuable adjunct to screening.

Referring again to that middle link, the mosquito. Every village health officer should have a malaria survey made of his community. He has two alternatives. One is to organize a mosquito abatement district and eliminate all mosquitoes, or get an appropriation from his village council to control only the breeding of the malaria mosquito. If he attempts to form a mosquito abatement district he will need all of the publicity he can muster. On the other hand if he attempts to fight a lone battle with the malaria mosquito, he had better fight silently, taking malaria statistics before and after, and brag after he has accomplished his purpose. I give this timely warning because it has been my experience that it takes a long time to educate the public to differentiate between the malaria mosquito and the pestiferous mosquito.

My parting advice is to control breeding in club ponds in Southern Illinois. The data which Mr. Dapert presented does not give a true picture of the situation. It deals with only those who live near this pond, whereas thousands of persons fish and play golf in the vicinity of club ponds. These transient cases are accredited to the community in which they live.

The remedy is that the edges of the pond should be kept free from grass and floatage and stocked with minnows, or else the marginal grasses and lilies should

be dusted with Paris Green mixed with 100 parts of lime or inert dust of some sort. Paris Green may be applied with a dusting machine such as is used to dust fruit trees. The treatment should be made from a boat. A club attendant could be assigned to the task of dusting the pond at weekly intervals. If this were done many such cases, the source of which heretofore have been unaccounted for, would disappear from the annual record in these towns.

MULTIPLE SENSITIZATION IN ALLERGIC DISEASES

SAMUEL J. TAUB, M. D.

Associate in Medicine, Northwestern University Medical School;
Attending Staff Cook County and Washington Park Community Hospitals

CHICAGO

It is now generally accepted that many diseases are caused by sensitization of the body to some protein, either epidermal, furs, food, pollen, bacteria and a miscellaneous group such as orris root, pyrethrum, silk, kapok, etc. We know that sensitization to one or more of these proteins may cause asthma, hay fever, urticaria, eczema, angioneurotic edema, migraine, and possibly epilepsy. This sensitization or hypersensitiveness is determined by dissolving the suspected protein extract on a scratch in the epidermis or by injecting a small amount of the dissolved protein intradermally. The cutaneous "scratch" test is the method usually used because it is safest. The intradermal method is used only in patients suspected of pollen, dust, animal emanations and other miscellaneous sensitizations who give negative cutaneous reactions. Fatal results occasionally occur with the intradermal test, which offers ample reason for its abandonment for general use.

A positive test consists of an urticarial wheal, or at times an erythema, occurring usually within five to thirty minutes. Delayed reactions may occur eight to twelve hours later, particularly in food hypersensitiveness. I have available about 200 of these proteins exclusive of pollens and all of these proteins are used in testing each case of allergic disease. In a previous communication¹ I reported an asthma caused by canary feather protein and an eczema caused by silk. These cases emphasize the importance of making a sufficient number of tests on each patient and not just testing for the more common substances.

By multiple sensitization we mean sensitiza-

tion to any two or more unrelated substances. Patients who react to timothy pollen usually react also to other members of the Gramineae group, as red top grass, June grass, orchard grass, etc. Likewise, patients reacting to the pollen of ragweed will usually also react to other members of the Compositae, as giant ragweed, sunflower, cocklebur, etc. Brown² calls these group reactions and due to a similarity in the structure of the protein molecule. A person may be sensitive to some protein, such as a food with which he comes in frequent contact, even daily contact, and yet remain free from symptoms. Peshkin and Rost³ and Rackemann⁴ have found that about 10 per cent. of children without symptoms of allergy are sensitive to one protein or another. They are allergic but in equilibrium and the terminology, "balanced allergic state," has been advanced by Vaughn.⁵ The tissues are able to handle a given amount of the allergen without upsetting the allergic balance. Desensitization from eating small amounts may be a factor. An overdose of the allergen will upset the equilibrium with onset of symptoms. One may be sensitive to two proteins, maintaining allergic balance while the contact is with only one but developing symptoms on exposure to both. Very often hay fever patients are not relieved during the season and have been further relieved by avoidance of a food or epidermal protein to which they were found to be sensitive after further skin tests were made.

Multiple sensitization can best be illustrated by reporting a few cases.

Case 1. S. S., a woman, 32 years old, who has had bronchial asthma for ten years. Reactions were obtained to:

Chicken feathers.....	+
Dog hair.....	+
Duck feathers.....	+
Orris root 1:10,000.....	++++ Intra-dermal Test
House dust.....	++++

All feathers were removed from contact to patient, orris root free powder was substituted for the ordinary kind and autogenous house dust treatment was given. The asthma stopped completely and she has remained well for the past year.

Case 2. S. S., a man, 28 years old, had asthma for the past eight years. Reactions were obtained to:

Crab	++++
Cheese	++
House dust.....	++++

These foods were eliminated and under autogenous house dust treatment, he has remained asthma free.

Case 3. Mrs. W. W. Diagnosis, allergic rhinitis.

Reactions were obtained to goose feathers +++++, 1:1000 intracutaneous test; house dust +++++; orris root +++++, 1:1000 intracutaneous test. Cutaneous tests were negative. On removal of feathers and contact to orris root, the sneezing stopped without further treatment.

Case 4. J. A. R., high school teacher, aged 38 years, had bronchial asthma since the age of three. Also has urticaria, hay fever, migraine, and eczema. Hay fever has been present since age of three and sneezing occurs from June 1 to the first frost. Migraine has been present since ten years ago. Urticaria has been present since childhood. Attack of migraine usually preceded an attack of asthma by two hours. An attack of urticaria often ended in migraine or asthma and often all three would be present at the same time. He thought the migraine was due to eggs and did not eat them for years.

Family History: An uncle, cousin and a sister have hay fever and asthma. There are two children who have no allergic disease at present.

Reactions were obtained to the following:

Camel hair.....	++	Garlic	+
Cat hair.....	++++	Catfish	+
Chicken feathers....	+++	Crab	+
Goose feathers.....	++++	Sardine	++
Horse dander.....	++	Sole	+
Turkey feathers....	+	Apricot	+++
Muskrat	+	Cantaloupe	+
Skunk	+++	Cherry	+
Brussel sprouts....	++	Grapefruit	+
Celery	+++	Boxwood	+
Lettuce	+++	Cotton	+
Pea	++++	Orris root	+
Potato	++	Pyrethrum	++++
String bean.....	++	House dust.....	++++
Tomato.....	++	Silk	++++
Cloves	+		

Pollens: Orchard grass.....	+++
Timothy	+++
Red top	+++
Ragweed short.....	++++
Ragweed giant	+++
Sunflower	++++

In the treatment all feathers were removed and kapok was substituted. All foods giving reaction were eliminated. Grass mixture, mixed ragweeds, and autogenous house dust treatments were started. The attacks of asthma, migraine and urticaria became less severe and since the last month he is well and free of all symptoms.

Case 5. Mr. L. K. Diagnosis, allergic rhinitis. Negative to cutaneous tests. Intracutaneous tests to duck feathers 1:1000, +++++; orris root 1:1000, +++++.

Slight relief was obtained after removal of feathers from his environment. He noticed that sneezing would occur regularly after shaving and applying face powder. All contact to orris root was removed. An orris root free powder is being used and he is free of all symptoms since the past two months.

Case 6. Mr. H. G., aged 35 years. Diagnosis, hay fever and asthma. Has had hay fever past eight years and had some incomplete treatment for the past three years, with little results. Two years ago asthma developed at height of the hay fever season. He has had

(Continued from page 257)

CASES OF ACUTE FOOD SICKNESS
CHICAGO—1929

Date Investigated	Patients		Suspected Food	Analysis of	Probable Cause
	Adults	Children		Suspected Food Actually Consumed	
1/26	2	..	Imported canned shallots	Yes	B. Botulinus type B., tests positive
2/ 5	2	2	Tomato paste	No	Tests negative
2/10	4	..	Roast beef, shrimp salad, gravy	No	
2/21	2	..	Canned salmon, salad dressing	No.	Methyl chloride. "Elec. refrig."
2/26	2	1	Roast beef, mashed potatoes, lettuce, rice pudding	No	
3/12	2	3	Cereal, milk, fruit	No	
3/21	3	..	Cheese tidbits	No	
3/28	2	4	Roast pork, mashed potatoes, gravy, canned pineapple, milk	No	
4/ 2	2	..	Fried chicken, biscuits, rice, gravy	Yes	Tests negative
4/ 4	2	1	Fried eggs, mashed potatoes, pea soup, milk	Yes	Tests negative
4/15	3	..	Ice cream, caramel, whipped cream	No	
4/16	4	4	Tainted frankfurters	No	
	30	15			
Grand total.....				45	
Summary				Occurrences	Cases
B. Intoxication.....				1	2
Poisoning				1	2
				2	4

*One fatality.

no asthma after the hay fever season. Skin tests were positive for:

Ragweed short..... + + + +
Ragweed giant..... + + + +
Burweed marsh elder..... + + + +
Cocklebur + + +
Sunflower + + + +
Orris root + + + + 1:1000 intracutaneous
Pyrethrum +

Treatment included a combination of the ragweeds, burweed marsh elder and cocklebur, and an orris root free powder. Complete relief was obtained last year and asthma has not been present since the past year.

These cases of multiple sensitization, chosen from a number of similar ones, emphasize the importance of making a sufficient number of tests on each patient in order to detect all offending proteins and thus give these patients complete relief.

55 East Washington Street.

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ONLY ONE LINE

A few strokes carried the beach lifeguard to the side of the woman who had gone beyond her depth.

"Oh, save my hair! Save my hair!" she cried, pointing to a wig floating on the water.

"Madam," replied the guard, "I am only a lifesaver, not a hair restorer."

Society Proceedings

ADAMS COUNTY

The regular monthly meeting of the Society was called to order by the president, at 8:25 P. M., with thirty-three in attendance.

Dr. Carson Gabriel gave a talk on "Impressions of European Clinics." The remainder of the scientific program was conducted by the Des Moines County Medical Society of Iowa. Dr. George B. Crow of Burlington read a very interesting paper on "Essentials in Drug Therapy." This was discussed by Drs. John A. Koch, L. H. Nickerson, Walter Stevenson, E. B. Montgomery, J. C. Brown of Lewistown, Missouri, and was finally closed by Dr. Crow.

Following this, Dr. A. A. Eggleston of Burlington read an interesting paper on "Some Factors in the Diagnosis and Treatment of Carcinoma of the Stomach." Discussion of this paper was conducted by Drs. W. W. Williams, C. O. Molz, Aldo Germann, Frank Cohen, Warren Pearce, Harold Swanberg, and finally closed by Dr. Eggleston.

A rising vote of thanks was given the speakers for

their courtesy in making the trip to Quincy to address us.

COOK COUNTY

Chicago Medical Society Joint Meeting with Chicago Society of Industrial Medicine and Surgery, March 5

Methods of Determining Industrial Disability—F. M. Wilcox, Chairman, Industrial Commission, State of Wisconsin.

Fractures Near To and Involving Joints—Dr. F. N. Cloyd, Danville, Illinois.

Chicago Medical Society, Regular Meeting, March 19

Paroxysmal Tachycardia, by Harlow Brooks, Professor of Clinical Medicine, Bellevue Hospital, New York City. Discussion: M. Paul Starr, L. D. Snorff, Frederick Tice.

Chicago Medical Society, Regular Meeting March 26

Hearing Examination and Conservation (Motion Picture)—Austin A. Hayden. Discussion: John Theobald.

Cancer of the Larynx (Lantern Slides)—George Boot. Discussion: T. C. Galloway.

Personals

Dr. F. Garm Norbury of the Norbury Sanatorium, Jacksonville, Illinois, accompanied by his wife, sailed March 29th for Europe. They will tour France, then go to Amsterdam, Holland, where Dr. Norbury will do special work in the University of Amsterdam, Neurological Department under Prof. B. Brouwer, and later take a post-graduate course in psychiatry, Maudsley Hospital, London.

Dr. Roy D. McClure, Detroit, addressed the Chicago Surgical Society, March 7, on "Study of Complications of Cholecystectomy."

Dr. Nathan S. Davis III gave a talk on "Economic Problems of the Physician," March 9, at the Chicago Academy of Sciences, Lincoln Park.

Dr. Richard H. Jaffe gave an address at the Quine Library of the University of Illinois College of Medicine, March 19, on "The Faculty of the University of Vienna in 1830."

The Chicago Pathological Society was addressed March 10 on "Cavernous Hemangioma in Nodular Goiter" by Drs. George M. Curtis and P. Arthur Delaney and on "Lipoid Nephrosis" by Dr. Philip F. Shapiro.

Drs. Percival Bailey and Roy P. Grinker gave a "Practical Demonstration of Anatomy,

Pathology and Symptomatology of Brain Abscess of Otogenic Origin," March 3, before the Chicago Laryngological Society.

The Chicago Gynecological Society was addressed March 21 by R. G. Gustavson, Ph.D., on "The Female Sex Hormone," and Dr. Edward L. Cornell presented a motion picture case report of an abdominal pregnancy with living child.

The Peoria City and County Medical Society was addressed, March 18, by Dr. Edwin W. Ryerson, Chicago, on "Chronic Arthritis" and "Ankylosed Joints, Arthroplastic Operations to Produce Mobility" and by Dr. Joseph A. Capps, Chicago, on "Pericarditis."

Dr. Simon Flexner, director, Rockefeller Institute for Medical Research, New York, delivered the Gehrman lectures for 1929-1930 at the University of Illinois College of Medicine March 27-28. The first lecture was on "The Epidemiology of Poliomyelitis," and the second on "Epidemic and Postvaccinal Encephalitis and Allied Conditions."

The Chicago Society of Internal Medicine was addressed, March 24, by Drs. Jacob Meyer and Louis B. Kartoon on "Effects of Intravenous Injections of Foreign Protein on Peptic Ulcer"; Drs. Loyal E. Davis and Lewis J. Pollack. "Effect of Atropine on Skeletal Muscle Tonus," and Dr. Siegfried Maurer and Loh Seng Tsai, Ph.D., "Effect of Vitamin Deficiency on Learning Ability."

Dr. George Gellhorn, professor of obstetrics and gynecology, St. Louis University School of Medicine, delivered the annual Bacon lectures at the University of Illinois College of Medicine; the first lecture, March 6, on "Use of Local Anesthesia in Gynecology," and the second, March 7, on "Syphilis of the Uterus."

Dr. John A. Wolfer addressed the Lake County Medical Society, March 12, on "New Concepts of Gall Bladder Surgery."

At annual meeting of the Moline Physicians Club, March 9, the following officers were elected: Dr. Phebe Pearsall-Block, president; Dr. E. A. Edlen, vice-president; Dr. H. A. Beam, secretary; Dr. C. W. Koivun, treasurer.

News Notes

—The Chicago Council of Medical Women held the regular monthly meeting on April 4 at

the Medical and Dental Arts Club. A program was presented by Dr. Frances A. Ford, Mayo Clinic, on "Low Voltage Irradiation of the Ovary and Pituitary in Treatment of Menstrual Disorders," and Dr. Margaret Bell, Ann Arbor, Mich., on "Dysmenorrhea in College Girls."

—At the annual meeting of the Camp Directors Association, recently, it was recommended that examinations of all workers in kitchens in summer camps be insisted on. As a result of a study conducted by the National Safety Council, it was shown that camp illness and accidents, while few, are more prevalent among boys than girls. The object is to eliminate communicable disease and insure better health for campers.

—Governor Emmerson has proclaimed April 27 to May 3 as Health Promotion Week. May 1 will be Child Health Day. A program has been planned especially for civic leaders to disseminate information about preventive medicine, and themes have been suggested for addresses for the days designated as Health Sunday, Health Education Day, Dental Hygiene Day, Parent Education Day, Child Health Day, Vaccination Day and House Screening Day.

—Dr. Irving S. Cutter, dean, Northwestern University Medical School, recently announced that it is planned to erect on the McKinlock Campus, east of the present location of Passavant Memorial Hospital, a children's hospital and clinic as soon as funds are available. The estimated cost of the hospital is about \$1,500,000, with a capacity of 100 beds. The hospital will be under the jurisdiction of Dr. Isaac A. Abt, professor of pediatrics at Northwestern.

—An intensive campaign of public health instruction in basic facts concerning hygiene, housing, sanitation and general health, given in Spanish by native Mexicans, has been inaugurated by the Municipal Tuberculosis Sanitarium, which now has 642 members of the Mexican colony under supervision for tuberculosis. The lectures are supplemented by moving pictures. Primers printed in Spanish will be distributed to encourage an understanding of sanitation in relation to tuberculosis. Health messages also are being printed in the Spanish newspapers.

—The vital statistics of Illinois for 1929 show that the excess of births over deaths in the state has decreased 42 per cent since 1921. Further-

more, the actual number of births reported annually dropped 11 per cent, while the birth rate per thousand of population for 1929 was 21 per cent below the rate for 1921. The birth rate for 1929 was 17.2 per cent per thousand of population, the lowest on record, and the death rate 11.7.

—Malaria is threatening to come back as a dominant health problem. Sharp increases in prevalence throughout the lower Mississippi valley have been observed during the last two years. The increase was noticed in Illinois at points much farther north than for many years previously. In its efforts to check the spread of malaria, the state department of health has arranged for a series of meetings with local medical societies in the southern part of the state to be addressed by Dr. Charles P. Coogle, specialist in malaria control, U. S. Public Health Service. The first lecture was given, March 24, at Harrisburg.

—The state health officer, Dr. Andy Hall, has issued a warning to druggists against prescribing remedies, in which he cites instances of patients becoming public charges. The most common illegal practice of druggists is probably the sale of alleged remedies for venereal diseases. One in each seven males admitted to the state hospitals for the insane and one in each seventeen females owe their mental condition to syphilis. Proper and prompt treatment of these patients immediately following infection would prevent some of these patients eventually coming in the state institutions. Druggists who prescribe a remedy for a symptom described by the customer are practicing medicine, and to do so without a license is contrary to law.

—At a meeting of the council of the Chicago Medical Society, March 11, a representative of the Chicago Retail Druggist Association proposed a plan to bring about a reduction of the high cost of medical care as it relates to pharmacy and also reduce self medication by the public. The proposal includes an educational campaign with talks by physicians, also the presentation to medical groups of the results of studies by pharmacists, and an exchange of articles in the bulletins of the Chicago Medical Society and the Chicago Retail Druggist Association. It is estimated that 12,000,000 prescriptions are filed annually in Chicago. Should physicians confine their prescribing to products

included in the United States Pharmacopeia, the National Formulary and New and Nonofficial Remedies, they would save the public about \$4,000,000 annually. This plan will reduce the number of products in retail stores and seek to lessen the evils of counter prescribing and suggested self medication. The council of the Chicago Medical Society endorsed the proposition.

—The University of Illinois College of Medicine will soon undertake the construction of a \$1,500,000 laboratory building on the site of the old Cubs ball park, at the southeast corner of Polk and Lincoln streets. The brick and stone structure, containing 2,200,000 cubic feet, will provide room for the departments of anatomy, chemistry, physiology, pathology and pharmacology, as well as class rooms. In its architectural features it will harmonize with the English collegiate gothic style of the research hospital, library building, various laboratories, nurses' home, power plant, and laundry, costing about \$4,500,000, which have already been completed, and a building to be devoted to juvenile research which is nearing completion. Plans have been made to accommodate ultimately classes of 200 medical students and 100 dental students, though at the present time facilities in the clinical departments will not permit classes of this size. Near the site of the ball park is the new school of pharmacology. Since the present medical campus was acquired in 1922, the University of Illinois College of Medicine has steadily carried on a building program. When completed within the next few years, it will provide a medical plant comparable to the best in the country.

—St. Anthony's Hospital, Effingham, has recently installed elaborate apparatus for electrical and other physical therapy.

—The International Congress for Mental Hygiene, May 5-10, 1930, is to be attended by many foreign delegates. Some of these will be available for lecture engagements. Their interests cover a very wide range and it is probable that a suitable speaker could be found for most any group of interested human behavior. The National Committee for Mental Hygiene will provide information about these visitors, their subjects, their possible itinerary and availability to any organization interest. Apply to Dr. George S. Stevenson, 370 Seventh Avenue, New York.

Deaths

PIERCE J. FULLERTON, Irving, Ill.; University of Michigan Medical School, 1879; formerly Missouri and Pacific Railway physician at Dupo; aged 76; died, March 7.

CHARLES BYRON GRIFFITH, Chicago; Illinois Medical College, Chicago, 1910; a member of Illinois State Medical Society, aged 50; died, March 26, suddenly of chronic myocarditis, in dining room of Edgewater Beach Hotel. Dr. Griffith was a staff member of Lake View Hospital.

CHARLES W. HANFORD, Chicago; Medical Department of the University of the City of New York, 1891; a member of the American Radium Society; formerly consulting radium therapist to the Cook County Hospital and the Illinois Central Hospital; aged 60; died, February 14, at Martinsville, Ind., of heart disease.

WILLIAM CLARK HILL, Alton, Ill.; Rush Medical College, Chicago, 1880; aged 89; died, January 26, of cerebral hemorrhage.

JOHN N. KRAEMER, Belleville, Ill.; Beaumont Hospital Medical College, St. Louis, 1892; aged 71; died, February 11.

EDGAR H. LITTLE, East St. Louis, Ill.; Marion-Sims College of Medicine, St. Louis, 1900; formerly postmaster of East St. Louis; aged 57; died, March 1, of septicemia resulting from an infection received while operating on a patient in January.

NORVAL DOUGLASS MARBAKER, Chicago; Boston University School of Medicine, 1921; assistant director of the industrial health division of the National Safety Council; aged 33; died, March 12, at Passavant Memorial Hospital, of septicemia, following an operation for appendicitis.

HUGH MUNRO MILLER, South Bend, Ind.; Northwestern University Medical School, 1902; founder of South Bend Clinic; a veteran of the World War; aged 51; died, in Chicago, March 14, of organic heart disease.

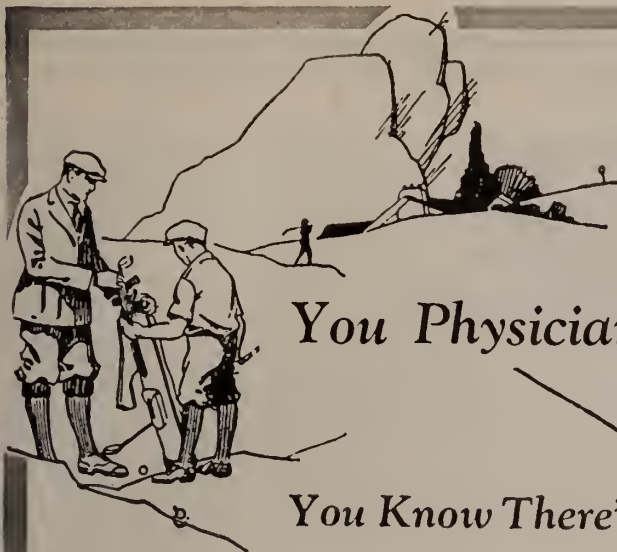
CHARLES ALEXANDER MOORE, East Alton, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; a member of Illinois State Medical Society; aged 55; died, March 13, of heart disease.

EDWIN HARTLEY PRATT, Chicago; Hahnemann Medical College and Hospital, Chicago, 1873; aged 80; died, March 6, at Galva, Ill., of uremia.

ELDEN MAXWELL PRICE, Astoria, Ill.; Rush Medical College, Chicago, 1899; past president of the Fulton County Medical Society; served during the World War; aged 53; died, February 2, of pneumonia following influenza.

MARY A. SAGNER, Thomson, Ill.; Keokuk (Iowa) Medical College, 1902; aged 50; died, February 7, at the Jane Lamb Hospital, Clinton, Iowa, of nephritis.

JOHN SEGSWORTH, Wilmette, Ill.; University of Toronto, (Ont.) Faculty of Medicine, 1894; aged 63; died, February 18, at the Evanston (Ill.) Hospital, of coronary thrombosis.



You Physicians Who Play Golf,

You Know There's a Club for Every Stroke

*A*LMOST any player can swing around the course with a single club, dubbing drives, lifting fairway sods and bringing home a century mark or more for the final score. But the finished golfer needs a club for every shot—a studied judgment of approach or putt before the club is selected.

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Editorials

SHEPPARD - TOWNERISM RISES REINCARNATED IN THE JONES-COOPER MATERNITY AND INFANCY BILL S. 255, RECOMMENDED TO THE SENATE FOR ENACTMENT WITHOUT AMENDMENT BY THE COMMITTEE ON COMMERCE

In substance a bill to revive and to perpetuate the Sheppard-Towner Act, the Jones-Cooper Maternity and Infancy Bill, S. 255, was recommended to the Senate for enactment without amendment on April 9.

This new bill has all the quackeries, trickeries and glass beads of the original pig-in-a-poke that was wished upon a gullible citizenry, and that failed to effect any discoverable reduction in maternal and infant mortality rates though it did reduce the surplus in the tax-payer's purses. If figures were available to show that the Sheppard-Towner Act, the grandmother of these nice politically jobbery white elephants had cut down these mortality rates the expert statistical jugglers who worked on the Jones-Cooper bill would have had no hesitancy in having these figures appear in the report just submitted by the Senate Committee on Commerce in support of its recommendation for the enactment of the Jones-Cooper bill. Instead the mortality statistics submitted by the committee are infant and mortality rates for 1924 and for prior years that have been shown on previous occasions to be utterly irrelevant where the Sheppard-Towner Act is concerned. For the last four and a half years, under the operations of the Sheppard-Towner act, the period when maternal and infant mortality rates should show a material increase in the rate of decline, if the act had exerted any influence in that direction. the committee has submitted no figures whatsoever. This absence from the report would seem to indicate that such sta-

tistics as are available would not have supported the committee's recommendation.

The Jones-Cooper bill is open to every objection ever raised against the Sheppard-Towner Act. It seeks to subject intrastate health activities of the several states to federal supervision and control. It purposes to provide for all time, federal subsidies for states willing to subject their activities in the field of material and infant hygiene to the supervision of the Children's Bureau and above all it seeks to perpetuate the Sheppard-Towner act, that is not only a useless piece of legislation but one for which perpetuation is absolutely illogical.

Proponents of this legislation insisted that it would reduce what they contended was an excessively high infant and mortality rate in the United States. So they cannot complain now if mortality rates are used as a measure for the lack of success of the Sheppard-Towner Act's functioning, and its efficiency in operation.

If the act failed,—as it did—to reduce such mortality rates then what excuse can be given for its resurrection and perpetuation?

The truth of the matter would seem to be that the same reason exists for the perpetuation of Sheppard-Townerism as caused its inception, and not a pretty reason at that.

Reduced to its basic elements and exposed to the searchlight of truth Sheppard-Townerism, was, is and always will be a direct and menacing piece of socialistic legislation that neither feeds, shelters or relieves mothers or infants nor in any wise bears upon maternity relief other than to increase taxation for the purpose of delivering obstetrics more or less into lay hands and providing an increased number of good jobs for political appointees, not licensed physicians, either.

Represented by its backers and sponsors as a temporary measure to get each state interested in providing adequately for the welfare and hygiene of mothers in its own territory, now through the Jones-Cooper act we seem about to have Sheppard-Townerism ad infinitum, ad libitum and ad nauseam. Personally we cannot see any reason at all for this perpetuation into a permanency of a measure that had been foisted upon us as an emergency relief. Also let it be noted that as soon as the Sheppard-Towner Act had expired a number of states increased their maternity appropriations, a thing they had not

done during the life of the Federal act. As soon as the Sheppard-Towner Act had expired fifteen states and the Territory of Hawaii made appropriations from their own treasuries and went about their own business at a rate that they had never done while depending upon the federal government for support. Instead of stimulating the separate states to make maternal appropriations the federal appropriations had the same effect as money from home. Continued federal subsidies will make a "remittance man" out of any state.

When thrown on their own resources the states that wanted maternity legislation and maternity benefits managed to find the money to care for this work. Sheppard-Townerism failed both to reduce maternity and infant mortality and to increase state appropriations for its upkeep.

From every angle Sheppard-Townerism would seem to have flopped. It did not reduce mortality rates, it did increase taxation, and as a stimulant to state appropriation it had no effect.

How then can its revival, and its perpetuation in either the Jones-Cooper bill or in any other form have any justification?

PROTEST AGAINST THE PASSAGE OF THE PORTER NARCOTIC BILLS

In the April issue of the JOURNAL we analyzed the proposed narcotic bills now before Congress. In this issue we are emphasizing a few points for convenience in writing protest to your congressman. The bills are known as H.R. 11143 and H.R. 9054.

Bill 11143 transfers to a proposed commissioner of narcotics all federal functions with respect to narcotics now vested in the Commissioner of Prohibition and abolishes the Federal Narcotic Control Board and vests all authority and power of that board in the proposed Commissioner of Narcotics and magnifies the Division of Narcotics in the Bureau of Prohibition into a Bureau of Narcotics.

Bill 9054 makes it compulsory to obtain a license from the United States Commissioner of Prohibition before physicians can use narcotics lawfully in the practice of medicine. It authorizes the commissioner to prescribe regulations governing the issuing, suspension and revocation

of licenses without considering any licenses any State may issue.

H.R. 9054 further provides that the commissioner, considering the rejection of an application for a license, is not required to give an applicant notice of his supposed qualifications and further provides that only the Commissioner of Prohibition may pass on the evidence submitted, and there is no provision in the bill for suspending the operation of the commissioner's decision pending a decision in the courts.

No. 9054 further provides that witnesses and other evidence for the defense may be suspended only by and at the direction of officers of the Prohibition Bureau who are to hold the hearing.

The Porter Bills are further evidence of a growing tendency towards an oligarchy in this country and represent the growing bureaucracy at Washington, which is not only a useless governmental extravagance but is bound to prove the undoing of our democratic form of government.

All necessary narcotic regulations are amply covered in the present Harrison Narcotic Act. The objectionable features mentioned in the Porter Bills include a further amount of red tape and are impregnated with many dangers they will impose upon physicians. The present Harrison Narcotic Law has made it not only difficult but unsafe for physicians to treat drug addicts, and because of this the addiction problem has been turned over to the underworld.

Under the Harrison Law the physician hesitates to care for drug addicts, regardless of how touched he may be by the patient's plight, or how clear his conscience is in giving a prescription. A reputation that has taken a lifetime for a physician to build up may be destroyed over night because of the whim of a lay dictator in charge of narcotic enforcement.

Reliable statistics show that there are approximately 100,000 addicts in the United States and that physicians play an infinitesimal part, if any part, in the cause of drug addiction. In view of this we can see no justification for so much regulation, restriction and proscription of the medical and allied professions in an attempt to correct the addiction problem. As we have said re-

peatedly, addiction is an underworld problem, not a medical one.

The bills are now before Congress. H.R. 11143 was passed without amendment by the House of Representatives, April 7, 1930. It is now being considered by the Senate Committee on Finance, of which Charles Deneen is the Illinois member.

H.R. 9054 is before the Committee on Foreign Affairs. Member of this committee from Illinois is Morton D. Hull. Doctors should write members of the committees, also all members of congress from Illinois, protesting against the passage of the Porter Bills.

Send your communication directly to the members at Washington, D. C., care Senate or House of Representatives.

Not only members of the committees referred to should be interviewed or communicated with; send protests against the Porter Bills to all members of the House and Senate from Illinois. The following is the personnel of the House and Senate:

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THE OLD FASHIONED FAMILY DOCTOR
TREATED PEOPLE. THE DOCTOR OF
TODAY TREATS DISEASE — THIS
MAY BE A MACHINE AGE, BUT
THE PEOPLE WHO LIVE IN IT
CONTINUE TO BE HUMAN
BEINGS

One of the drastic complications of modern civilization in relation to the practice of medicine is the change in attitude between the physician and the patient.

The old fashioned physician was wont to treat persons. Individuals, the ailments of personal entities received the advice and attention. But nowadays the doctors treat disease. The ailment rather than the ailing is the chief objective of the practicing physician of today. There is no quibbling over the fact that the element of the human relation is almost entirely eliminated in modern treatment of disease.

Substitution of machine for human routine is possible with profit only in the exact sciences, in which classification medicine most surely does not lie. Even in the application of the exact sciences it is impracticable to omit the human element, for any profession that omits the human element ceases to be a profession and becomes a commercial enterprise. After all the verities and the humanities do not lie so very far apart.

That the awakening to this truth is becoming general is evidenced by the increasing insistence of the value of humanistic studies as a preparation for a professional career by heads of schools of law, medicine, dentistry, architecture and even of engineering.

There is much of interest as well as food for thought in the comment made by an octogenarian and outstanding physician, Dr. William Henry Welch. Epitomizing the impersonal automatisms of the day as meat for the critic's jaws, Dr. Welch while approving the soundness of modern research does not fail to remember the virtues in the older dispensation.

"One thought makes me look back with gratitude and love to the old family doctor," remarks Dr. Welch in an interview published in the *New York Times*. "The old fashioned family doctor treated people. The doctor of today

treats disease. The old family doctor, though he had a long beard where germs abounded and even a spotty vest knew his patient and in many cases the patient's family, and his physical peculiarities. If medicine were an exact science I should say, 'Yes, the family doctor has outlived his generation.' But it is not, and he has not."

In this connection there is advantage in quoting from a recent editorial in "*America*," to the effect that, "A patient is something more than a sprain, and a client something that is not all tort. The physician and the lawyer must recognize this truth if they wish to exercise all the power for good inherent in a profession. That power is primarily opportunity and ability to contribute to human welfare. Otherwise they are individuals who make a living on the woes of their fellows."

There is no argument that a man who confines his interests to one angle of life alone, ignoring contingencies and tangencies of all the complexities that go to make up life, will eventually find his power in his profession as dried up and atrophied and emasculated as are his personal relations. There must be a keen understanding of the good and evil that is in man, and in individual men for a physician to be able to live up to all that his profession implies and even to what it demands.

Those white-coated machines who look upon each patient with the cut-and-dried aloofness with which an entomologist regards a new bug or a botanist a fresh sprout are lacking in the vital spark that makes a physician a great man.

The germs in the beard of the old-fashioned doctor are well consigned to the limbo of forgotten things, but what needs to be raised again from the dead is the kindly, encouraging, absolutely human look on the face of the old-fashioned physician that made the suffering human feel that in him lay a friend who was both willing and able to pull him through the rough places and whose presence was almost as excellent a panacea as his pills. This may be a machine age, but the people who live in it, unfortunately, continue to be human beings, and a certain amount of humanity is necessary in dealing with them.

FEEBLE-MINDED CRIMINALS DESERVE SEPARATE ASYLUM FOR THEIR CONFINEMENT AND THIS IS DIRE DEFECT IN ILLINOIS PENAL SYSTEM

Eyes of the world are focused now as never before upon the criminal reform, criminal restriction and penal system of the United States.

Overcrowding of penal institutions, through the tremendous increase of penalty bearing statutes, is but one phase of the problem, that has as many sharp edges as if the courts and legislatures of the country had sown the dragon's teeth.

Dr. Edward H. Ochsner, whose information is authentic and whose judgment is respected is both candid and emphatic in his comment that one of the gravest defects in the Illinois penal system is the lack of an asylum for the exclusive confinement of the feeble-minded criminals. Since there is no proper and adequate place for incompetent criminals, it is necessary for many of these prisoners to be sentenced by the courts to institutions for tractable and non-criminal feeble-minded. This practice brings about a source of contamination to feeble-minded but non-criminal inmates. Unwelcome police duties devolve upon the staff of these asylums. Residents in the vicinity live in a justified fear of escaped criminals of poor mentality. In fact the entire state suffers from this flaw in the prison machinery.

Dr. Ochsner in 1915 was president of the state charities commission. He was instrumental on the formulation and passage of our present law for the commitment and segregation of the feeble-minded, a law that he believes is unimpeachable though the means for its administration are unavailable.

Taking a far-sighted view of the present problem, Dr. Ochsner urges the installation of this asylum for feeble-minded criminals. Unless there is a suitable institution for the detention of mentally defective criminals where experiments for their rehabilitation may be conducted without threatening the safety of society, the only makeshift is to send all criminals to prison, no matter what is the state of their respective mentalities.

As it is now the feeble-minded who have never done anything wrong except to be feeble-minded are quartered down at Lincoln, or at

Dixon with debased and criminal persons of defective mentality. The hazard is too obvious for comment. Vicious adolescents find fertile ground for the sowing of a new crop of depravity. To be sure this error is only one of many faults that might be picked with the Penal system on the rounds of its inadequacies but it is certainly one of the most preventable ones. One of the most remediable evils in the penal system is the relief of evils in commitment, and it is a relief that never fails to bear the best of fruit.

By the time the next legislature convenes there should be submitted for definite appropriation such an explicit program for the correction of evils in commitment where the feeble-minded are concerned that Dr. Ochsner's farsighted view of the present penal predicament can be of direct advantage to the residents of the State of Illinois.

A LAW TO PROMOTE PAIN

THE CHICAGO TRIBUNE TAKES THE MEDICAL VIEWPOINT ON THE PORTER NARCOTIC BILLS

The *Chicago Tribune*, under date of April 28, comments editorially on the Porter Narcotic Bills now before congress. We quote:

"Representative Stephen Porter of Pennsylvania has introduced a number of bills at this session of congress for the control of the traffic in narcotics. One of the bills, establishing a bureau of narcotics, has already passed the house. A companion measure would forbid even a physician to dispense narcotics unless he was licensed to do so by the federal bureau.

"The creation of a bureau of narcotics we regard as a doubtful expedient. The limitation on the right of a doctor to give drugs where he believes they are indicated we regard as something more than inexpedient; it is unsound in principle and is likely to cause much needless suffering in practice.

"The tendency among legislators is to vote for any measure of narcotic control that the racketeers of the uplift propose. Congressmen fear that a vote against such measures will be regarded as a vote in favor of the dope traffic. They assume from the reading of much superheated propaganda that narcotics are wholly evil and that there is no legitimate use for them. The assumptions are false. Narcotics have caused much suf-

fering to those addicted to their use, but viewed in perspective these drugs are a blessing rather than a curse to mankind. They have blotted out pain which could scarcely have been endured otherwise. They have saved many more lives than they have cost. Every medical school in the country gives careful instruction in the proper use of narcotics and every practitioner knows their habit-forming character.

"There is little danger in permitting doctors at least their present freedom in prescribing opiates, but there is much danger that additional red tape will mean additional human suffering which might have been relieved but for the government's interference."

FRENCH DOCTORS NOW SALARIED EMPLOYEES OF THE STATE

According to the *Chicago Tribune* press service, small pay man wins free doctor advice in France.

"From now on small wage earners in France will not have to pay doctor or hospital bills and they will be fully protected against old age, death and unemployment.

"This is the result of the passing in the senate and the chamber of deputies of the long discussed social insurance bill. According to the bill, workers earning less than \$700 annually—a good average salary in France—will be obliged to contribute a small percentage of their salaries to the monthly social insurance fund, the employers and the government putting up a like amount.

"French doctors have bitterly opposed the bill, charging that it makes them virtually salaried employees of the state. Due to their opposition the bill, putting into effect the original measure passed in 1928, has been delayed two years."

DOCTOR DAVID B. PENNIMAN. OBITUARY

Dr. David B. Penniman, for many years counselor of the Illinois State Medical Society from the First Council District, died in Florida, April 4, after a long illness.

His health had been impaired for several years and he was spending the winter in Florida hoping that he would be benefited by the change of climate. Dr. Penniman's home was in Rockford, where he had been a practicing physician

for many years. Dr. Penniman passed the first fourteen years of his life in Woodburn, Illinois, where he was born in 1867. At the age of fourteen years he moved to Overland, Ohio, with his parents, where he continued his education for eight years in the preparatory school and college. He was later graduated from the medical school of Northwestern University and first located in Spring Valley. In 1893 he moved to Argyle and his success prompted him to move to Rockford.

In 1893, Dr. Penniman married Miss Corda Schively of Shelby, Iowa. The widow and two sons, Lawrence Penniman, Kokomo, Indiana, and Alfred Penniman of Chicago, survive. Dr. Penniman was an elder in the First Presbyterian Church of Rockford and was affiliated with the Masonic fraternity, the Modern Woodmen and the Mystic Workers.

REDUCED RAILROAD FARE FOR THE JOLIET MEETING

The passenger association offers a reduced fare for those attending the State meeting at Joliet May 20-22. The arrangement is on the certificate plan. Certificate should be asked for at the time of purchase of the ticket, the certificate to be validated at Joliet. When this is done, the purchaser is entitled to a return ticket at half fare, providing one hundred certificates are presented for validation at the registration booth at the State meeting.

DR. OLIN WEST SHOWS HOW THE IN- STALLMENT PLAN OF BUYING AF- FECTS THE COST OF MED- ICAL SERVICE

THE COST OF MEDICAL CARE IS A MERE SPECK ON THE ECONOMIC MAP

In an address before the Wisconsin State Medical Society in September, 1929, published in the *Wisconsin Medical Journal* in December, Dr. West touched upon the economic side of medicine. He referred to the installment plan of buying, which forms an important part in the cost of medical service. The following excerpt from the address is quite illuminating and timely. We quote:

"Dr. West said that the janitor of his building has a finer piano, a more costly radio, a better

automobile, a prettier oriental rug than I can afford. The janitor's wife also has an electric washing machine, an electric vacuum sweeper, and the Lord knows what else, and all these luxuries were bought on the installment plan. If the janitor's wife or children should be sick and have to go to the hospital for operation, the attending physician would have to forego his fee or wait a long time for a part of what ordinarily would be a fair charge for his services. The hospital, too, might have to wait for its fee. These gentlemen who are promoting all of these supposedly wonderful fine schemes for relieving the poor man of the burden of the cost of medical care have never asked the prospective purchaser when he went in to buy whether he had any sickness in his family, and they never have reduced one cent the price of a washtub or pair of shoes or sack of flour because the buyer has been the victim of bad luck. Go to the banker to borrow money and find out what you can do. You will have to pay higher interest than the rich man, and give more or better collateral than he, and the banker will not ask you one question as to whether or not you have had sickness in your family. High pressure salesmanship is a part of our economic system of today, and in consequence the last farthing of the ordinary man is tied up through the installment plan of buying and selling. Therefore, when we talk about the high cost of medical care we must take into consideration the whole economic situation as it exists today, and study and analyze it carefully. The cost of medical care is a mere speck on the economic map."

THE NATION FACES A CRISIS IN THE TENDENCY TOWARDS THE CENTRAL- IZATION OF ALL GOVERNMENT POWER IN WASHINGTON

FEDERAL POWER CARRIES TOO FAR, BAR CHIEF
SAYS

CHESTER I. LONG TALKS TO ILLINOIS LAWYERS

Local self-government and individual liberty are in grave danger in this country, and through them the government itself is endangered, Chester I. Long of Wichita, Kas., former president of the American Bar association, recently told the justices of the Supreme court of Illinois. He spoke at a banquet given

for the judges by the Illinois Bar association in the Drake hotel.

Mr. Long, a former member of congress, warned the lawyers and judges that the nation faces a crisis in the tendency toward the centralization of all governmental power in Washington. He also warned against the recent tendency toward amending the constitution. He said that the forces to oppose those evils are fast gathering and urged his audience to join in the fight.

WOULD APPEAL TO CONGRESS

"Let us appeal to public opinion," he urged. "Let us appeal to the legislatures, to congress, and to the courts, that local self-government and the liberty of man, woman, and child shall not perish from the earth.

"We should call attention to the liberty of the individual, which neither the state nor the national government can take away from him. The powers of the states have been steadily decreasing. Local self-government has been impaired. We have a dual form of government. It is the first attempt in history to establish such a government. It should continue as it was made in the beginning.

"In the first 120 years of our national life there were passed only five amendments to the constitution. There have been passed four amendments to the constitution in the last twelve years. And there were 100 more proposed amendments pending when the last session of congress closed. I tell you, gentlemen, we are at a crisis!"

Mr. Long served one term in the United States senate. Elihu Root spoke of the trend toward centralization twelve years ago, before the four new amendments had been added to the constitution. President Coolidge also was cited, Mr. Long pointing to the Arlington address:

"From every position of consistency with our system, more centralization ought to be avoided."

FEARS FOR PERSONAL LIBERTY

Then he turned to individual liberty. He said that a number of attempts to further curtail the liberty of persons have recently been made.

"It has come to such a pass," he declared, "that there is an attempt not only to regulate actions of persons, but their opinions, their minds, by law."

He pointed to attempts to pass laws in Iowa,

Nebraska and Ohio dealing with the teaching of foreign languages in the public schools, of an attempt to abolish private schools by law in Oregon. He said all those were attempts at infringement of the liberty of persons, and the United States Supreme court declared them unconstitutional on that ground.

In those cases the Supreme court thus defined liberty, he said: "Liberty denotes not merely freedom from bodily restraints but also the right of the individual to contract, to engage in any of the common occupations of life, to acquire useful knowledge, to marry, to establish a home and bring up children, to worship God according to the dictates of his own conscience, and generally to enjoy those privileges long recognized at common law as essential to the orderly pursuit of happiness by free men."

Finally Mr. Long said: "Liberty has been imperiled by the destruction of local self-government. Let the states resume and exercise the powers reserved to them. Restore liberty by restoring state control over local affairs."

The Porter Narcotic Bills now before congress illustrate beautifully the dangers of centralization of power in Washington, D. C. The Porter Bill will put into the hands of the federal government bureaucratic control of the rights of the various states, a centralization of power unnecessary, uncalled for, and is an attempt of the federal government to control the practice of medicine. It is a forerunner of more drastic bureaucratic legislation by the bureaucrats who seek to place the control of everything in the hands of an overcentralized government in Washington, D. C.

FREE MEDICAL CARE FOR COLLEGE STUDENTS AND UNIVERSITIES WITHOUT REGARD TO THE INABILITY OF THE INDIVIDUAL TO PAY FOR SAME

At the 1928 session of the A. M. A. in Minneapolis, Minnesota, the editor of the ILLINOIS MEDICAL JOURNAL introduced a resolution asking investigation of the reported practice that students in universities or medical colleges are being given free medical care, without regard to the ability of the individual to pay for this service.

The resolution was referred to a reference

committee of the A. M. A. for investigation and report. A thorough investigation was made by the judicial council, which reported at the Portland session of the A. M. A. July, 1929, as follows:

To the Members of the House of Delegates of the American Medical Association:

The following resolution, submitted to the House of Delegates at Minneapolis by Dr. C. J. Whalen, delegate from Illinois, was referred on recommendation of the Reference Committee on Legislation and Public Relations to the Judicial Council:

WHEREAS, It has come to our attention that students in universities and colleges are being given free medical care without regard to the ability of the individual to pay for the same, therefore be it

Resolved, That the Judicial Council be requested to investigate the matter as to the extent to which this practice prevails.

In accordance with the purport of this resolution, the Judicial Council addressed 136 letters to colleges and universities throughout the country and received 111 replies. The information secured through these communications may be summarized as follows:

Sixty-nine colleges give physical examinations to their students. Some of these are given periodically, some annually, and some only at time of entrance of students.

Sixty-one colleges provide students with medical advice. In two cases advice is given by the college nurse.

Nine colleges provide vaccination and other forms of immunization.

Forty-three colleges provide their students with medical treatment.¹

Seventeen colleges provide their students with surgical treatment.¹

Eleven colleges provide first aid and emergency treatment only.

One college gives diagnostic service only.

One college provides unlimited medical service to its students.

Five colleges have a clinic service. (One has this service only, and one provides "unlimited" clinic service.)

Two colleges have an outpatient service.

Six colleges allow university physicians (or nurse) to make professional calls to the homes or rooms of students.

Four colleges provide prescriptions and drugs free. (One provides drugs at cost.)

Twenty-six colleges maintain their own hospitals for ill students.

Forty-five colleges maintain infirmaries.

(Three have both a hospital and an infirmary; in one, the hospital is a ward in the university hospital, and in another it is an isolation hospital only.)

1. Medical and surgical treatment, in all cases, is given only in "minor ailments" and "ordinary illnesses."

Twenty-nine colleges provide hospital care for students for from one day to an unlimited period.

3 wks.	2 wks.	Less than 2 wks.	Unlimited Time	Miscellaneous	Time Not Stated
1	5	3 for 10 days	2	1, to sum of \$20	2
		2 for 1 week			
		1 for 5 days		1, at nominal charge	
		2 for 3 days		1, to certain limit	
		1 for 2 days			

Twenty-three colleges provide infirmary care for from two days to an unlimited period.

2 wks.	1 wk.	Less Than 1 wk.	Miscellaneous	Time Not Stated
4	2	1 for 4 days	1, limited time	13
		2 for 2 days		

Eleven colleges provide a dispensary service. (Two provide this service only.)

Sixty colleges maintain nurses. (These are full-time nurses in all cases.)

(One hundred and sixteen nurses are employed, in all, in the 111 colleges from which replies were received.)

Ninety-six colleges employ physicians either full time or part time or both, as follows:

Both Full and Part Time	Full Time Only	Part Time Only
26	35	35

(Two hundred and sixteen physicians are employed, in all, in the 111 colleges from which replies were received. Of these, eighty are full-time, and 136 part-time. Of the 136 part-time physicians, the University of California has fifteen—specialists from the medical school staff for consultations—and the University of Minnesota has twenty-two—specialists, who also practice privately, for consultations.)

While it appears to be true that practically all of the institutions replying to the communication of the Council allow students to choose their own physicians, only fifty-one of the institutions from which replies were received stated definitely that free choice of physicians was permitted without restrictions. Seven of these, however, keep reference lists of physicians for the students' assistance; one of these seven "tries to control choice"; one, "in cases of protracted illness"; one, even in physical examinations; two, with benefit of college hospital; one, "in consultation"—"no student can continue under medical care without knowledge of the university physician"; one, subject to approval of medical director. (In all cases in which student chooses outside physicians, he is responsible for fees.)

Four colleges state that they have no health service. (One of these does give physical examinations on entrance.)

Sixty colleges state definitely that the payment of special fees is required in connection with the health or medical service provided by these institutions, the amount of the fees collected varying from \$1 to \$20 a year.

AMOUNTS OF SPECIAL FEES AND NUMBER OF COLLEGES CHARGING THEM

\$5	\$10	Up to \$5	Up to \$10	More Than \$10	Sum Not Stated
17	8	*1, \$0.80	4, \$6.00	1, \$12	7
		†2, 1.00	1, 6.50	\$1, 20	
		2, 2.00	2, 7.00		
		‡5, 3.00	1, 8.00		
		1, 3.75	1, 8.50		
		2, 4.00	1, 9.00		
		2, 4.50	1, 9.60		

*The university charging the \$0.80 fee (which is allotted from a \$1 laboratory fee—not stated whether annual or otherwise) also supports its service by means of appropriations from the university funds.

†One of the colleges charging the \$1 fee gives dispensary treatments and charges \$1 a day for infirmary service. The other provides infirmary care and some medical service.

‡The payment of the \$3 fee in one college—this fee is optional—entitles the student to membership in the "Students' Health Association," without which membership the student is not entitled to benefits of hospital care for two weeks, diagnostic, prescription service, etc.

§The university charging the \$20 special fee also charges \$6 a day for infirmary service after four days.

In eleven colleges the health service is financed entirely by means of appropriations from the university funds.

In four, fees are charged as well as appropriations made from university funds.

Six colleges require no special fee but state that a sum to cover the service is included in the tuition fee.

Twenty-eight colleges do not state how the health service is financed, and four have no health service.

(In one instance, an allotment of the annual incidental fee is made, but the students are not informed regarding what proportion of the incidental fee is devoted to the support of the students' health service. The president of the university says: "We once had a special student health fee but we felt it a better policy to do away with this special health fee which the students realized they were paying and for which they might feel they were getting or should get a great deal of service.")

One college president write, "The majority of our students look upon this service as an economical form of health insurance."

In at least one instance, the physical examination service is provided for the faculty also.

In most cases in which the college does not maintain its own hospital, hospitals are available for the use of ill students, the service usually being given at a lower cost.

A number of colleges state that their student health service is operated on a deficit.

Replies received indicate that the officers of colleges and universities throughout the United States feel that it is the duty of the college to look after the physical welfare of its students, and one gets the impression from reading these replies that it is intended to extend the health and medical services already established by educational institutions throughout the country, and

that in those universities and colleges which have not established such services, the tendency is to make such provision as soon as possible.

Note and Comment:

In the July, 1928, issue of the *ILLINOIS MEDICAL JOURNAL*, we commented editorially on the character of medical service at many endowed and state universities. We gave a detailed analysis of a survey we made of medical service in 34 universities. The data given in the survey, together with the findings of the judicial council of the A. M. A., gives an up-to-date statement of the free medical service given at universities.

Free medical service as dispensed at many of the country's leading colleges and universities tends to instill into the students a growing sense of dependency, rather than of self-reliance.

There is no more reason why students should be educated to receive free medical attention than that they should be taught to expect similar advantages in the way of board, lodging and clothing. The principle of mass care treatment is not compatible with the principles of which the United States has prospered as a democracy.

BEG YOUR PARDON

In the January *JOURNAL*, the marriage of Dr. Edward M. Irwin of Belleville, member of Congress from the 22d District of Illinois, was stated to have occurred in the previous November. Dr. Irwin writes that "the statement that I have been married is grossly incorrect and wholly untrue; I am not now married, and I have been a widower since January, 1928."

We regret that the error appeared in the *JOURNAL*. The item was copied from an exchange.

THE 1930 ANNUAL MEETING

Final arrangements are made for the Eightieth Annual Meeting which will be held in Joliet May 20, 21 and 22, 1930. It is hoped that the efforts of the Committee on Arrangements and officers of the Society will be rewarded by a large attendance. Joliet is well located for a convention. Whether you travel by rail, or by auto, it is very easy to get to Joliet. This Annual Meeting is the Member's own meeting. Every County Medical Society should be well

represented. The House of Delegates will meet on Tuesday afternoon. On Thursday morning the House will have much important business. Each component Society should be well represented, for the House of Delegates is the actual Legislative Body of the Illinois State Medical Society.

Joliet itself invites all members to come and see the type of hospitality available in this city. All meeting places are centralized around the Chamber of Commerce, the actual headquarters. Meeting places are all within a stone's throw of the principal hotels. If hotel accommodations are not already arranged, get in touch with Dr. Roy B. Leach Chairman of the Hotel Committee, Joliet, and make suitable reservations at once. Officers sponsor interesting programs in each Section. The official program appears in this number of the *JOURNAL*. Look it over carefully to see what is offered. The list of invited guests is selected carefully. All of them are well worth the time of every member. Remember the date. Arrange to go to Joliet on May 20, for the first day of the convention. Boost your own Society and come. Bring someone with you. The Ladies have had an interesting entertainment arranged. It is hoped that this year the ladies will have a greater registration than ever before. The Joliet Ladies' Committee will entertain the visiting ladies every moment. The Women's Auxiliary has planned ably as appears in the official program. Let us all work together to make this Eightieth Annual Meeting of the Illinois State Medical Society one to be long remembered.

EXHIBITS

An unusually interesting display of both Commercial and Scientific Exhibits has been arranged for the Joliet Meeting. According to the usual custom of the Illinois State Medical Society these exhibits have been selected carefully. No exhibit shown will be in any way objectionable. It is hoped that everyone present will spend as much time as possible among the exhibits, meeting those in charge, and getting acquainted with the products shown. Everything in the way of up-to-date equipment, supplies, accessories, drugs and apparatus will be there. Get acquainted with the policies of the exhibitors. See what they are doing to aid the work of those in the

practice of Medicine and its various specialties. We recommend the exhibitors to the members and guests of the Society.

Much will be shown in the Scientific exhibits that will be of interest to everyone. The American Medical Association will have an unusually interesting display of the many things the Association is doing for the physicians of America. The Illinois Department of Health will show what the Department is doing to help control disease in Illinois. Most of the commercial exhibitors will give special prices on all things ordered at the Joliet meeting. It is hoped that members will anticipate their wants and patronize our exhibitors.

Exhibits at the Joliet meeting have been carefully selected. We highly recommend them to all in attendance. The Exhibition Hall is unusually convenient. Everyone must go through the Exhibition Hall. Attendants will be present to help in getting exhibits arranged, and to render all possible assistance. A night watch service will be given for the three nights of the convention. All exhibits should be in place, and finally arranged by Monday night, May 19. Arrangements will be made for work on Monday evening, if desired. Electric outlets are prepared for all booths. The Joliet Warehouse and Transfer Company will receive all exhibit materials consigned and will store these until Monday morning, when everything will be placed on the floor of the Exhibit Hall. After the meeting, this Company will take care of the exhibits and ship them according to directions received. The Illinois State Medical Society is interested in the exhibits and your interests. We want to aid you so that everything can be shown to the best advantage. Representatives of the Society will be present early Monday morning May 19, to aid in every way possible. If you want special furniture, rugs, lamps, etc., arrangements can be made for same by writing Dr. B. G. Wilcox, Joliet, Illinois, Chairman of the Committee on Arrangements.

If further information is desired, same can be obtained by writing Dr. Wilcox, or Dr. Harold M. Camp, Secretary, Illinois State Medical Society, Monmouth, Illinois, and your information will be furnished promptly.

JOLIET AWAITS YOU—THE EIGHTIETH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY WILL BE HELD AS THE GUEST OF THE WILL-GRUNDY COUNTIES MEDICAL SOCIETY

IN THIS EASILY REACHED CITY ARRANGEMENTS HAVE BEEN MADE FOR AN EXCEPTIONALLY INTERESTING STATE MEETING
JOLIET 1930

Joliet is unsurpassed in railroad facilities. It is located on four of the greatest trunk lines of the Middlewest—a one-hour run from Chicago. Seventy passenger trains arrive and depart daily. Joliet, advantageously thirty-seven miles southwest of Chicago, makes direct connection with all railroads leaving Chicago. These roads are: Chicago, Rock Island & Pacific, Chicago and Alton, Santa Fe, Elgin, Joliet and Eastern Railway, and the Chicago, Milwaukee & St. Paul. These last two are of interest only to the exhibitors as they do not offer passenger service. Joliet is the center of bus line service from Aurora, Kankakee, St. Louis, Peoria and Chicago. The Illinois Valley is served by an Interurban Line that also runs into Chicago. Joliet has eight hard roads radiating in all directions. Easy to connect with any road no matter from what part of the state you may come. Lock up the old pill bag. Get away from the telephone. Plan on spending three profitable days in a city that promises entertainment and education.

Joliet hotels conveniently located within the loop are as follows: (See List Published Below.)

Exhibits shown this year, will be larger, more elaborate and better than ever. These will be displayed in the Chamber of Commerce Building, which is amply large and where the county society has arranged for full control during the State meeting.

The Ladies in charge of the Woman's Auxiliary have promised interesting entertainment for the wives, as well as a tea at the Country Club. There will be one of the largest meetings of the Woman's Auxiliary this year.

Joliet has much of interest including 1417 acres of parks. The Pilcher Arboretum of 327 acres, considered one of the finest arboretums in this section of the United States, affords one of the most beautiful drives in the State through a heavily-wooded forest. The road winds along

Hickory Creek for a distance of six or seven miles. Highland Park of 60 acres is a combination of formal and natural park, completely equipped with a children's playground. The Woodruff Bridle Paths have 120 acres of bridle paths and riding stables. The Bird Haven has 75 acres of a wonderful bird sanctuary and new greenhouse. There are 100 acres in the Woodruff Golf Course with 27 holes, open to the public. Higinbotham Woods of 238 acres has a look-out tower erected on the highest point in the vicinity. West Park's 40 acres is a combination of formal and natural park. Nowel Park has 25 acres and a modern out-door swimming pool from a deep well which is fit to drink at all times due to constant filtration and chlorination. The Barr Golf Course now under construction on 241 acres will have 27 holes. The Joliet Airport is of 178 acres. When completed at an expense of \$355,000 and modelled according to United States Government plans, it will be one of the finest in the world.

In Joliet are 166 manufacturers. There are three branches of the United States Steel Companies. At the Illinois Steel Company branch permission is granted us to show any of the visiting delegates and their wives and friends through these plants. This is arranged by Dr. Walter Huey who has charge of the Committee on Transportation.

Another point of interest is the Rialto Theater which has a seating capacity of 2400. This theater completed during the last few years is one of the largest and most elaborate in the world. A new \$500,000 Y. M. C. A. is open to guests. Statesville is one of the largest penal institutions. The new one, about three-fourths finished, draws visitors from all parts of the world. Medical people can go in and out without restriction.

Interesting performances will take place at the Stag which will be held at the Moose Hall, Tuesday evening, just after the General Session meeting. This includes four-round speedy bouts. Golden Glove fighters will show their stuff. Through the courtesy of the Public Service Company of Northern Illinois and Dr. Hart E. Fischer, their chief surgeon, we will show the "Evolution of Resuscitation" which demonstrates the earliest methods down to the most accepted methods of the present day, both by mechanical and manual methods and will be held previous

to the Stag, by the men who gave it before the American College of Surgeons at the meeting in Chicago. All of these men showing this work have actually saved human lives for which they were given medals. Dr. Fischer will be in charge of these in person.

A three-times National Championship High School Band and a three-times State Championship grade school band, and a state championship orchestra will be heard by the visitors. The orchestra will play at the President's dinner.

Come along—Joliet Awaits You!

B. G. WILCOX,
General Chairman.

JOLIET HOTELS

Name	Address	Phone No.	No. Rooms	Rate
Apollo	—412 N. Chicago	St. 6286	35	\$1.00 up
Boston	—413 Cass St.	....7674	35	.75 up
Central	—658 Cass St.	....7044	30	1.00 up
De Luxe	—116 Jefferson St.	.....3495	55	.50 up
Grand	—404 Cass St.	....6653	42	1.00 up
Hobbs	—Clinton St.	.....1234	25 Single	{ 1.00 up without 2.00 up with
Louis Joliet	—Scott & Clinton Sts.	.....7100	225 Single	{ 1.75 up without 2.50 up with
Marquette	—210 N. Ottawa St.	.....5846	62	1.25 up
Monroe	—312 N. Chicago St.	.....767	45	1.00 up
National	—112 S. Bluff St.	254	55	.50 up
Oliver	—209 Richards St.	6610	100	1.25 up
St. Nick	—600 E. Jefferson St.	.....6057	56	1.00 up
Victoria	—111 E. Jefferson St.	.....6455	18	.75 up
Walker	—417 Western Ave.	.....5800	300 Single	{ 1.50 up each with bath
Woodruff	—Jefferson & Scott Sts.	.....4567	102	1.75 up

Members desiring to make hotel reservations should get in touch with Dr. Roy B. Leach, local chairman of hotels and information committee, 204 Scott street, Joliet, Illinois.

MORE ABOUT THE ANNUAL MEETING

If experience and age are factors for betterment, the Eightieth Annual Illinois State Medical Convention Meeting should be the best in its history. This is not an unwarranted statement for the following reasons: First, Joliet's location near the center of population of the state; second and most important advantage is the central grouping of *Headquarters, Exhibition Building* and *Section Building*, the two latter are under the same roof in the beautiful Joliet Chamber of Commerce building; third, this is

the first time in many years that the Section on Eye, Ear, Nose and Throat has met practically in the same building with the Sections on General Medicine and Surgery. Immediately across the street from the Chamber of Commerce building is the new Y. M. C. A., which will be made use of during convention week.

At no previous State Convention meeting, in the memory of the writer, has such favorable grouping of all sections and exhibitions been enjoyed by those in attendance. This factor avoids confusion and loss of time traveling to find the section desired or the exhibit interested in.

For the accommodation of those driving to the Convention, two large fire-proof storage garages are located—one, the Louis Joliet, 300 cars, one-half block from Headquarters; the other, Central Court Garage, 300 cars one block from Headquarters. Representatives of these garages will be at Headquarters to check and care for your cars, and I am advised that a special rate for those attending the convention will be made. Other outdoor parking places are available within a short distance of Headquarters and the services of the Joliet Boy Scouts have been secured to guide you to parking places, Exhibits and Section headquarters, or to any point desired in the city.

Realizing that all work and no play is not good for doctors, as well as other humans, automobiles will be at your service when desired to take you to any of the points of interest in and about the city, mentioned in another article in this issue by Dr. Wilcox. The Deep Waterway passing through Joliet, the great turning basin, dam, and locks under construction, should be seen while here—and a few minutes drive will take you to one of the most beautiful scenic spots in Illinois, Dresden Heights, the junction of the three rivers, the Kankakee and the Desplaines to form the Illinois.

Joliet has many interesting institutions; it is the outstanding wall paper city of the country, having five large plants of this character, also three large art calendar works, but the most unique institution is the new American Institute of Laundry.

This new American Institute of Laundering, representing as it does an investment of more than half a million dollars, presents a beautiful picture indeed, its prestige and influence being

such as to attract visitors from all sections of the United States.

Joliet is also honored by being the home of the Champion High School Band, who have thrice won the national laurels. Her grade school band has also taken two state championships and the High School orchestra has this year won its second state championship, and you will be favored with several selections by this orchestra at the President's Banquet. The Champion High School Band will welcome you on your arrival in Joliet Tuesday morning, May 20, at Headquarters.

Joliet welcomes you and is leaving nothing undone to make this 1930 State Convention an outstanding success, not only from a scientific standpoint, but from an entertainment point of view. Come and help us to make the 1930 Illinois State Medical Convention the success which the officers' efforts warrant.

GRANT HOUSTON, M. D.

Joliet, Ill.

MAKE CHICAGO THE MEDICAL CENTER OF THE WORLD

CLINICAL MEDICINE AND SURGERY
NORTH CHICAGO, ILL.

April 25, 1930.

Dear Editor:

Rather tardily I have gotten around to read your good editorial in the February ILLINOIS MEDICAL JOURNAL boosting Chicago as the Medical Center of the world. I think all your points are well taken and I am writing to place myself on record on your side. How will one go about doing something?

GEO. B. LAKE, M. D.

Managing Editor.

Note: We suggest to Dr. Lake that he use the valuable columns of *Clinical Medicine and Surgery* to tell the world that Chicago is the logical medical center of the United States, a distinction rightfully belonging to it by virtue of its location, the many facilities it offers medical students and the distinguished professional achievement and leadership of its practitioners.

Nowhere is the ability of Chicago's several thousand medical practitioners, surgeons and specialists surpassed, and it is doubtful if many are even equaled. Chicago is bound to be the

medical center of the world. We suggest that everybody get in and boost Chicago in order to bring this desired result about in the shortest period of time.

DOCTORS IN FIELDS OTHER THAN THE PRACTICE OF MEDICINE

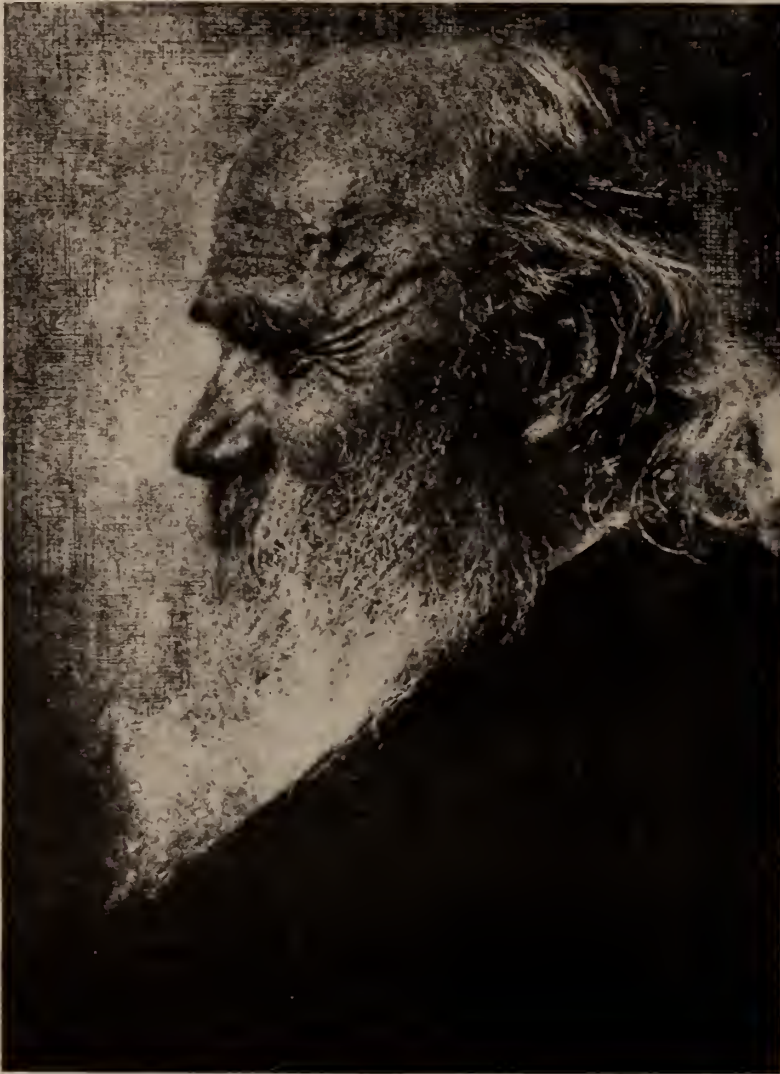
With this issue the ILLINOIS MEDICAL JOUR-

tion publishes in each issue a brief article in a series "Hobbies of Medical Men."

The April issue contains an illustrated article by a Chicago physician.

Monthly the *Journal of the Iowa State Medical Society* runs comment upon the subject, "Iowa Physicians Who Cultivate Fields Other Than the Practice of Medicine."

We hope that with the beginning of this series



TOLSTOY'S DOUBLE [Prof. Edoardo Perroncito]
DR. MAX THOREK, F. R. P. S.

NAL opens a series of personality sketches, of prominent members.

This is in line with the trend of the times in building up the human interest angle of the learned professions.

Medical Mentor, the official organ of the American Medical Editors and Authors associa-

tion we will at least meet with some response from the general membership as well as from officers of county medical societies from whom we have repeatedly asked for just such data as this.

We have as candidates for future write-up the names of three doctors who have achieved fame in fields other than medicine. They are Carl

Schneider, Richard S. Pattillo and Charles B. Reed, all of Chicago. Do any of our readers know of additional names that should be added to the list?

HOBBIES OF MEDICAL MEN

Dr. Max Thorek, Chief Surgeon of the American Hospital of Chicago, was the largest exhibi-

the second; eleven of the third; five of the fourth and five of the fifth. Also twenty certificates of merit and ten silver and three bronze trophies. Many of his pictures have been reproduced in magazines devoted to photography.

Nor is a camera the doctor's only avocation. He also plays first violin in the Chicago Business Men's orchestra.



ORIENTALE

DR. MAX THOREK, F. R. P. S.

tor in the United States of pictorial photographs during the year 1929.

As a result for the 220 prints hung in 42 salons in the United States and Europe, Dr. Thorek has received many honors. In the various exhibitions the doctor has been awarded twenty-nine prizes of the first rank; eighteen of

Readers of the JOURNAL can judge from these pictures of Dr. Thorek's artistry.

FIRST VOLUME OF MEDICAL HISTORY OF MICHIGAN IS READY FOR DELIVERY

The Medical History of Michigan is being

ordered in large quantities by doctors throughout the State. This fascinatingly written History should be in your library. Order your copy now from the Michigan State Medical Society, Grand Rapids, Michigan. The cost is \$5.00 per volume. The first volume is off the press. Orders may be sent direct to Dr. F. C. Warnshuis, National Bank Bldg., Grand Rapids, Michigan.

THE HISTORY OF TENNESSEE MEDICAL ASSOCIATION IS OFF THE PRESS

The Centennial History of the Tennessee Medical Association including the years between 1830-1930 is ready for distribution. No doctor's library will be complete without this volume. Orders for the book may be sent to The Tennessee State Medical Association, Doctors Bldg., Nashville, Tennessee.

ILLINOIS GENERAL ASSEMBLY CLASSIFIED ACCORDING TO OCCUPATIONS

Out of 204 members of a recent general assembly there were 63 lawyers, 24 farmers, 18 real estate dealers, 10 merchants, 8 insurance agents, 7 bankers, 6 newspaper editors, 6 teachers, 6 clerks, 6 housewives, 5 professional politicians, 4 contractors, 4 doctors, 3 manufacturers, 2 grain dealers, 2 oil dealers, 2 grocers, 2 stock raisers, 2 laborers, 2 jewelers, 2 salesmen and 2 undertakers. There was 1 business man, 1 machinist, 1 coal miner, 1 engineer, 1 linotype operator, 1 hotel manager, 1 painter, 1 druggist, 1 teamster and 1 cigar maker. The others were a nondescript lot who had no trade or profession worthy of recording.

Furthermore, less than one-half of these assemblymen had more than a common school education. Doubtless the great majority of the membership were individuals of unusual resourcefulness in their communities but only 83 had ever matriculated at a college or university, 16 more had been in high school while 105 had never gone beyond the common schools in pursuit of a conventional education.

CLINICAL CONFERENCE OF THE ST. LOUIS CLINICS

The St. Louis Clinics will depart from its usual procedure in conducting postgraduate courses in the fields of medicine and surgery. The Clinical Conference which will take place

in St. Louis, Missouri, June 9 to 21, inclusive, will consist of a series of lectures, demonstrations, clinics and round-table luncheon discussions on medical and surgical subjects of interest to the general practitioner. No attempt will be made to arrange the material in special courses, but it has been so selected and arranged that practically all fields of medicine, surgery and allied subjects will be included.

St. Louis is fortunate in the possession of two outstanding medical schools with a wealth of unsurpassed clinical material.

Clinicians of national and international prominence have accepted the invitation to participate in the conferences. This type of clinical conference has a distinct place in postgraduate medical teaching. The St. Louis Clinics doubtless will be an annual event.

MEETING OF ILLINOIS MEDICAL LABORATORY ASSOCIATION

The spring meeting of the Illinois Medical Laboratory Association will be held in Joliet, Tuesday morning, May 20th. The following program will be presented:

1. Newer Aspects of Undulant Fever, Dr. A. S. Giardano, South Bend, Ind.
2. Demonstration of Laboratory Tests for Undulant Fever, Dr. W. Henry Wilson, Joliet.
3. Psittacosis (Parrot fever), Dr. T. G. Hull, Chicago.
4. Hospital Laboratory Costs, Dr. J. J. Moore, Chicago.

Following the meeting there will be a luncheon and election of officers for the coming year.

A "CATCHING" DISEASE

Patient (calling on family doctor)—Doctor, my son has scarlet fever, and the worst part about it is that he admits he got it from kissing the housemaid.

Doctor (soothingly)—Young people will do thoughtless things.

Patient—But don't you see, doctor, to be plain with you, I've kissed the girl myself.

Doctor—By jove, that's too bad.

Patient—And to make matters worse, as I kissed my wife every morning and night, I'm afraid she will catch it.

Doctor (wildly)—Good heavens! Then I will have it, too!"—*Medical Pickwick*.

PARTLY ASLEEP

Mother—"Bobbie, is grandmother asleep?"

Bobbie—"Yes, all except her nose."—*Pathfinder*.

ILLINOIS STATE MEDICAL SOCIETY

EIGHTIETH ANNUAL MEETING
JOLIET, ILLINOIS

MAY 20, 21, 22, 1930

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President.....F. O. Fredrickson, Chicago
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 R. R. Ferguson, Third District.....Chicago
 J. S. Nagel, Third District.....Chicago
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 R. R. Ferguson, Chairman of the Council..
Chicago

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 Henry G. Ohls, Managing Editor.....Chicago
 J. W. VanDerslice, Secretary, Publication
 Committee.....Oak Park

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 Walter Wilhelmj.....East St. Louis
 A. H. Geiger.....Chicago
 Oscar Hawkinson.....Chicago

RELATIONS TO PUBLIC HEALTH ADMINISTRATION

E. W. Mosley, *Chairman*.....Chicago
 Ralph Hinton.....Elgin
 E. D. Levisohn.....Chicago
 F. F. Maple.....Chicago
 T. B. Knox.....Quincy

MEDICAL EDUCATION AND HOSPITALS

E. H. Ochsner, *Chairman*.....Chicago
 W. M. Hartman.....Macomb
 W. R. Marshall.....Clinton

COUNCIL COMMITTEES

EDUCATIONAL COMMITTEE

R. R. Ferguson, *Chairman*.....Chicago
 Charles J. Whalen.....Chicago
 James H. Hutton.....Chicago
 William D. Chapman.....Silvis
 Jean McArthur, *Secretary*.....Chicago

SCIENTIFIC SERVICE COMMITTEE

James H. Hutton, *Chairman*.....Chicago
 Harold M. Camp, *Secretary*.....Monmouth
 F. O. Fredrickson.....Chicago
 William D. Chapman.....Silvis

SECTION OFFICERS

SECTION ON MEDICINE

Frank Deneen, *Chairman*.....Bloomington
 L. D. Snorf, *Secretary*.....Chicago

SECTION ON SURGERY

Frank L. Brown, *Chairman*.....Chicago
 J. H. Bacon, *Secretary*.....Peoria

SECTION OF EYE, EAR, NOSE AND THROAT

Walter Stevenson, *Chairman*.....Quincy
 Harry S. Gradle, *Secretary*.....Chicago

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane, *Chairman*.....Springfield
 Charles H. Miller, *Secretary*.....Chicago

SECTION ON RADIOLOGY

I. S. Trostler, *Chairman*.....Chicago
 Henry W. Grote, *Secretary*.....Bloomington

SECRETARIES' CONFERENCE

W. H. Smith, *President*.....Benton
 I. L. Foulon, *Vice-President*....East St. Louis
 W. D. Murfin, *Secretary*.....Decatur

COMMITTEE ON ARRANGEMENTS

B. G. Wilcox, *General Chairman*.....Joliet
 Paul E. Landmann, *Secretary and Treasurer*
Joliet

Reception Committee—E. A. Kingston, *Chairman*; L. J. Fredrick, F. L. Chmelik, D. Killinger, R. Kennedy, F. Roberg, H. Stephen and E. J. Higgins.

Committee on Meeting Places—R. Ahlvin, *Chairman*; A. Houston, E. Steen, H. Flexer, L. Woodruff, H. Wadsworth and L. Brannon.

Registration Committee—V. Cohenour, *Chairman*; R. Harcourt, R. Schroba, J. Courtney. F. Towner and L. Wilhelmi.

Finance Committee—G. Houston, *Chairman*; R. Watson, T. Wagner, F. Towner, H. Woodruff and W. Welch.

Contact Committee—E. Talbot, *Chairman*; L. Stewart, J. Benson and J. Carey.

Committee on Information and Hotels—R. B. Leach, *Chairman*; A. Lennon, J. Krohn, C. Carlin and G. Faulkner.

Committee on President's Dinner—W. Hedges, *Chairman*; C. Barclay. J. Mitchell, W. McMahon and R. Watson.

Transportation Committee—W. Huey, *Chairman*; J. Carey, M. Bloomfield, L. Andrews and C. Eldred.

Entertainment Committee—E. Klein, *Chairman*; W. Fletcher, W. Hedges H. Flexer and A. Lennon.

Committee on Exhibits—Raymond Brown, *Chairman*; A. Shreffler, W. Martin, R. McGinnis, H. Patterson and W. L. Benishek.

Committee on Women's Auxiliary—Marion Bowles, *Chairman*; Mrs. L. J. Fredrick, Mrs. A. L. Shreffler, Mrs. Roy Leach, Mrs. Grant Houston and Mrs. Bernard Klein.

ILLINOIS STATE MEDICAL SOCIETY WOMEN'S AUXILIARY

PresidentMrs. J. R. Neal, Jr., Springfield
 President-Elect . . . Mrs. R. K. Packard, Chicago
 First Vice-President

.....Mrs. T. O. Freeman, Mattoon
 Second Vice-President and Parliamentarian . .

.....Mrs. F. H. Pirnat, Chicago
 Third Vice-President

.....Mrs. Ralph H. Loar, Bloomington
 SecretaryMrs. Harold W. Miller, Chicago
 TreasurerMrs. A. E. Dale, Danville

COUNCILORS

Mrs. H. H. West, First DistrictElgin
 Mrs. C. H. Ives, Second DistrictDixon
 Mrs. John R. Harger, Third District . . .Chicago

Mrs. P. R. Blodgett, Third District
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 Mrs. Philip H. Kreuscher, Third District . .
 Chicago
 Mrs. William D. Chapman, Fourth District . .
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 Mrs. F. P. Cowdin, Fifth District . .Springfield
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 Mrs. C. H. Tearnan, Seventh District . .Decatur
 Mrs. O. H. Crist, Eighth DistrictDanville
 Mrs. C. O. Lane, Ninth District .West Frankfort
 Mrs. Harry Smith Tenth District
East St. Louis

CHAIRMAN OF COMMITTEES

Registration Committee
Mrs. James H. Hutton, Chicago
 Bulletin Committee
Mrs. G. Henry Mundt Chicago
 Organization Committee
Mrs. T. O. Freeman, Mattoor
 Revision of By-Laws Committee
Mrs. F. H. Pirnat, Chicago
 Public Relations Committee
Mrs. Chas. H. Parkes, Chicago
 Credentials Committee
Mrs. Louis Ostrom, Rock Island
 Entertainment Committee
Dr. Marion K. Bowles, Joliet

PROGRAM

Tuesday, May 20, 1930

2:00—Entertainment by Joliet Ladies Committee.

7:30—Opening Meeting, Illinois State Medical Society.

8:45—Illustrated Lecture—Dr. Arthur J. Cramp, American Medical Association, Chicago.

Wednesday, May 21, 1930

10:00—Business Meeting of Women's Auxiliary.

1:00—Luncheon for the Ladies at the Joliet Country Club followed by a reception in honor of the incoming president, Mrs. R. K. Packard, Chicago. (Luncheon speakers to be announced.)

LADIES' ENTERTAINMENT COMMITTEE

Dr. Marion K. Bowles, *Chairman*,
 Mrs. L. J. Fredrick,
 Mrs. A. L. Shreffler.

Mrs. Roy B. Leach,
Mrs. Grant Houston,
Mrs. Bernard Klein.

Monday afternoon, May 19, and Tuesday morning, May 20, the newly organized Joliet Women's Auxiliary will greet the ladies as they arrive in the city for the meeting.

Tuesday Afternoon, May 20, 1930

2:00—Matinee at the Rialto Theater.

Tuesday Evening, May 20, 1930

7:30—Opening meeting, Illinois State Medical Society.

Wednesday, May 21, 1930

10:00—Business meeting, Women's Auxiliary.

1:00—Luncheon at the Joliet Country Club, followed by a reception in honor of Mrs. R. K. Packard, incoming president of the Women's Auxiliary.

3:00—Automobile drive through beautiful Joliet, a visit to some of the interesting Institutions, parks and other interesting drives.

Thursday, May 22, 1930

Interesting drives have been arranged to visit some of the beauty spots in the vicinity of Joliet, including a visit to a region abounding in wild crab apple blossoms said to be the finest display of its kind in the world.

"THE STAG"

After the opening meeting on Tuesday evening, May 20, 1930, the Will-Grundy County Society will be host to the visiting members of the male sex. The nature of the program has not yet been announced, as final details are not yet completed, but it will be of interest to all of the men at the meeting, and we have the assurance that we will be "royally entertained"

MEETINGS OF THE HOUSE OF DELEGATES

Tuesday Afternoon, May 20, 1930

3:00 P. M.—Meeting called to order by the President, F. O. Fredrickson, for reports of Officers, the Council, Committees and to transact other business to come before the House.

Thursday Morning, May 22, 1930

8:30 A. M.—Meeting called to order by the President for election of Officers, Councilors, Committees, Delegates to the American Medical Association, report of Resolutions Committee and for the transaction of other business than may come before the House.

SECRETARIES' CONFERENCE

Tuesday Morning, May 20, 1930

10:00 A. M.—"The County Medical Society—Its Duties and Responsibilities in Relation to Public Health," Arlington Ailes, La Salle.

10:20 A. M.—"The County Medical Society and Its Relation to the Individual," Lee O. Frech, Decatur.

11:00 A. M.—"Problems and Responsibilities of the Medical Editor," Charles J. Whalen, Editor, Illinois Medical Journal, Chicago.

11:30 A. M.—"A Few Informal Remarks." Olin West, Secretary and General Manager, American Medical Association, Chicago.

GENERAL SESSIONS

Tuesday Evening, May 20, 1930

7:30 P. M.—Meeting officially opened by President, F. O. Fredrickson, Chicago.

Invocation—Reverend Walter McPherson, Pastor, Universalist Church, Joliet.

Address of Welcome, Honorable George Sehring, Mayor of Joliet.

Address of Welcome, Grant Houston, President, Will-Grundy County Medical Society, Joliet.

Report, Chairman of Committee on Arrangements, B. G. Wilcox, Joliet.

Address, Mrs. George Thomas Palmer, Springfield. "The Relation of the Physician to Probation."

This meeting is open to the public.

Wednesday Afternoon, May 21, 1930

3:00 P. M.—Oration in Surgery, Dean D. Lewis, Professor of Surgery, Johns Hopkins University Medical School, Baltimore. "Surgical Conditions of the Breast."

Wednesday Evening, May 21, 1930

7:30 P. M.—President's Address, F. O. Fredrickson, President, Illinois State Medical Society, Chicago, "A Forward Look into Medical Practice."

8:00 P. M.—Oration in Medicine, Martin E. Reh fuss, Associate Professor of Medicine, Jefferson Medical College, Philadelphia, "Some Real Problems in Modern Medicine."

These addresses follow the President's Dinner in the Banquet Hall, Masonic Temple.

Thursday Afternoon, May 22, 1930

1:30 P. M.—Induction of the President-Elect, William D. Chapman, Silvis.

1:45 P. M.—Report of the House of Delegates.

PRESIDENT'S DINNER

The Annual President's Dinner will be held at the Masonic Temple on Wednesday Evening, May 21, 1930, at 6:30. This is an interesting function, honoring our President, F. O. Fredrickson, and the Past-Presidents of the Illinois State Medical Society who will be guests at the President's dinner.

It is hoped that every member and guest attending the meeting will be present at the President's Dinner.

Dr. J. P. Simonds will act as toastmaster owing to the recent death of the immediate Past-President Dr. J. E. Tuite.

A suitable dinner program has been arranged by the Committee.

Tickets for the dinner can be procured at the Registration Desks, from the Chairman of the Banquet Committee, Dr. Walter Hedges, or from any member of the Committee.

The President's Address and the Oration in Medicine will follow the dinner, the meeting in charge of the first Vice-President, R. L. Green.

SECTION PROGRAMS

SECTION ON MEDICINE

Frank Deneen, *Chairman*

L. D. Snorf, *Secretary*

Tuesday Afternoon, May 20, 1930

Chamber of Commerce

2:00 P. M.—Milk Sickness, William E. Walsh, Morris.

2:30 P. M.—Mental Hygiene, Frank P. Norbury, Jacksonville. Discussion opened by Dr. Schroeder, State Criminologist.

3:00 P. M.—Physical Diagnosis, Logan Clendenen, Kansas City, Mo. (By invitation.)

4:00 P. M.—Differential Diagnosis of Angina Pectoris and Similar Pains Produced by Arthritis, Don Sutton, Chicago.

Wednesday Morning, May 21, 1930

9:00 A. M.—Agranulocytosis, George Parker, Peoria. Discussion opened by Warren Pearce, Quincy.

9:30 A. M.—Chairman's Address, Frank Deneen, Bloomington.

10:00 A. M.—The Nature of Obesity, Louis H. Newburgh, Ann Arbor, Michigan. (By in-

viation.) Discussion opened by A. J. Casner, Bloomington.

11:00 A. M.—Colloids of the Blood Serum in Health and Disease, illustrated by films, Frank Wright, Chicago.

11:30 A. M.—Treatment of Paresis With Sulphur in Oil, Charles F. Read, Chicago; Sidney D. Wilgus, Rockford, and Ralph T. Hinton, Joliet. Discussion opened by George Michell, Peoria.

Wednesday Afternoon, May 21, 1930

Joint session with Section on Surgery.

3:00-6:00 P. M.:

1. The Mechanics of Posterior Occiput and the Application Thereto of Posture in Its Treatment (with illustrations), Gilbert Fitz-Patrick, Chicago.

2. Certain Aspects of Ectopic Surgery, A. J. Lennon, Joliet.

3. The Profession Incorporated, Charles B. Reed, Chicago Medical Society, Chicago.

4. The Care of the Wounded of the Division in the Field, Col. James J. McKinley, Division Surgeon, 33d Division, Illinois National Guard, Chicago.

Thursday Morning, May 22, 1930

9:00 A. M.—Abdominal Pain in Children, John F. Carey, Joliet. Discussion opened by John R. Vonachen, Peoria.

9:30 A. M.—Prognosis of Nephritis in Children, Andres Aldrich, Winnetka. Discussion opened by O. E. Barbour, Peoria.

10:00 A. M.—Undulant Fever, Lloyd Arnold, Chicago. Discussion opened by Thos. G. Hull, Chicago.

11:00 A. M.—Some Observations on the New Born, A. H. Parmelee, River Forest. Discussion opened by C. C. Jones, Bloomington.

11:30 A. M.—The Medical and Physical Cooperation in Pediatrics, Charles K. Stulik, Chicago. Discussion opened by Orville Barbour, Peoria.

SECTION ON SURGERY

Frank L. Brown, *Chairman*

J. H. Bacon, *Secretary*

Tuesday Afternoon, May 20, 1930

1:00 P. M.—Surgery of the Chest, Ralph B.

Bettman, Chicago. Discussion opened by Don Deal, Springfield.

1:30 P. M.—Injuries to the Bony Spine as Related to Arthritis, Sumner L. Miller, Peoria. Discussion opened by John R. Harger, Chicago.

2:00 P. M.—A Few Essential Principles of Amputations, S. L. Governale, Chicago. Discussion opened by E. B. Montgomery, Quincy.

2:30 P. M.—The Surgical and Economic Problems of Infantile Paralysis, Edwin W. Ryerson, Chicago. Discussion opened by Hugh Cooper, Peoria.

3:00 P. M.—Principles Which Render Present Day Surgery of General Medical and Surgical Interest, George V. I. Brown, Professor of Plastic Surgery, University of Wisconsin, Milwaukee. (By invitation.)

4:00 P. M.—Symptoms of Ruptured Gastric and Duodenal Ulcer, E. P. Coleman, Canton. Discussion opened by Warren Johnson, Chicago.

4:25 P. M.—The Management of the Debilitated Surgical Patients, Rollo K. Packard, Chicago. Discussion opened by Carl E. Black, Jacksonville.

4:45 P. M.—Fascial Sutures in the Repair of Inguinal Hernia, illustrated by motion pictures, William J. Pickett, Chicago. Discussion opened by E. S. Murphy, Dixon.

5:10 P. M.—Nerve Anastomosis for the Relief of Facial Paralysis (Illustrated by motion pictures), Alfred A. Brown, Omaha, Neb. (By Invitation.)

Wednesday Morning May 21, 1930

8:30 A. M.—Surgery of the Thyroid, Wilbur L. Bowen, Peoria. Discussion opened by Carl Hedblom, Chicago.

8:50 A. M.—Thyroidectomy for Thyrotoxicosis for Patients Beyond Fiftieth Year, J. M. Mora, Chicago. Discussion opened by E. P. Sloan, Bloomington.

9:15 A. M.—The Preservation of the Parathyroids in Goiter Surgery, George M. Curtis, Chicago. Discussion opened by Lindon Seed, Chicago.

9:45 A. M.—Rectal and Perirectal Drainage in Deep Pelvic Abscess, Charles J. Drucek, Chicago. Discussion opened by Clement Martin, Chicago.

10:10 A. M.—Factors That Make for Safe Gall Bladder Surgery, John J. Haeberlin, Chicago. Discussion opened by Clyde Finley, Galesburg.

10:30 A. M.—Surgery of the Pendulous Abdomen and Breast, illustrated by motion pictures, Max Thorek, Chicago. Discussion opened by Frank M. Mason, Danville.

11:00 A. M.—Surgery of the Hypophyseal Tumors, George J. Heuer, Professor of Surgery, University of Cincinnati, Cincinnati, Ohio. (By invitation.)

12:00 M.—Election of Officers of Section on Surgery for 1931.

Wednesday Afternoon, May 21, 1930: 3-6

Joint meeting with Section on Medicine.

1. The Mechanics of Posterior Occiput and the Application Thereto of Posture in Its Treatment (with illustrations), Gilbert Fitz-Patrick, Chicago.

2. Certain Aspects of Ectopic Surgery, A. J. Lennon, Joliet.

3. A Profession Incorporated, Charles B. Reed, President, Chicago Medical Society, Chicago.

4. The Care of the Wounded of the Division in the Field, Col. James J. McKinley, Division Surgeon, 33d Division, Illinois National Guard, Chicago.

There will be a general discussion of these papers.

SECTION ON EYE, EAR, NOSE AND THROAT

Walter Stevenson, *Chairman*

Harry S. Gradle, *Secretary*

Tuesday, May 20, 1930. 2 P. M.

Methodist Church

2:00—The Diagnosis of Glaucoma, J. H. Roth, Kankakee. Discussion opened by J. Duane, Peoria.

2:20—A New Method of Local Anesthesia for Alleviating Pain of Incising a Peritonsillar Abscess, M. R. Guttman, Chicago. Discussion opened by C. K. Gabriel, Quincy.

2:40—Colds, Complications and Sequelae, G. P. Conger, Oak Park. Discussion opened by Frank Novak, Chicago.

3:00—The Solitary Choanal Polypus, S. M. Morwitz, Chicago. Discussion opened by S. Salinger, Chicago.

3:20—Important Factors in The Diagnosis of Foreign Bodies in the Air Passages, C. D. Sneller, Peoria. Discussion opened by E. McGinnis, Chicago.

3:40—A Case of Bone Formation in the Choroid, S. J. Meyer, Chicago. Discussion opened by Thomas Allen, Chicago.

4:00—Mirrors of the Para-Nasal Sinuses, J. A. Cavanaugh, Chicago. Discussion opened by H. R. Wormley, Rockford.

4:20—The Indications for Simple Mastoid Operation, I. Muskat, Chicago. Discussion opened by W. W. Gailey, Bloomington.

4:40—Frequency of Atypical Surgical Mastoiditis in Children, M. H. Cottle, Chicago. Discussion opened by George Woodruff, Joliet.

5:00—Hole in the Macula—Case Report with Histological Findings, M. L. Folk, Chicago. Discussion opened by R. C. Gamble, Chicago.

Tuesday Evening, May 20, 1930

6:30 P. M.—Annual Banquet of the Section, with two short speeches and entertainment.

Wednesday, May 21, 1930

9:00—The Treatment of Squint in Children, C. S. O'Brien, Iowa City, Iowa. (By invitation.)

9:30—Diagnosis and Treatment of Commoner Affections of the Throat, J. C. Beck, Chicago.

10:00—Etiology and Treatment of Optic Neuritis, M. Weiner, St. Louis, Mo. (By invitation.)

10:30—Hyperplastic Sinus Disease in Relation to Retro-Bulbar Neuritis, S. G. Higgins, Milwaukee, Wisconsin. (By invitation.)

11:00—Modern Therapy of Corneal Infections, S. R. Gifford, Chicago.

11:30—Diagnosis and Treatment of Chronic Running Ear, W. P. Wherry, Omaha, Nebraska. (By invitation.)

These papers will be discussed in the afternoon, beginning at 3:00 P. M. following the Oration in Surgery. Each of the Orators will have a separate room, in which there will be a continuous discussion by those members interested in that particular subject.

SECTION OF PUBLIC HEALTH AND HYGIENE

John J. McShane, *Chairman*

Charles H. Miller, *Secretary*

Tuesday, May 20 1930

Y. M. C. A.

1:00 P. M.—1. Some New Economic Phases of State and Local Hygiene Program, Herbert E. Phillips, D. D. S. Chicago. (By Invitation.) Discussion opened by L. W. Neber, Springfield.

2. Results of 17 Years of Periodic Health Examinations in Industry, Hart E. Fisher, Chicago. Discussion opened by S. C. Plummer and C. W. Hopkins, Chicago.

3. Recent Advances in the Epidemiology of Intestinal Diseases, Lloyd Arnold, Chicago. Discussion opened by A. A. Goldsmith, Chicago.

4. Personal Hygiene in Relation to Public Health, Gottfried Koehler, Chicago. Discussion opened by John W. H. Pollard, Evanston.

5. Health Appraisals, John M. Dodson, Chicago. Discussion opened by C. U. Collins, Peoria.

Wednesday Morning, May 21, 1930

8:30 A. M.—1. The Health Department and the Practicing Physician, Harold M. Camp, Monmouth. Discussion opened by H. H. Tuttle, Springfield.

2. The School Physician in a Community Health Program, A. A. Crooks, Peoria. Discussion opened by F. A. Turner, Rockford.

3. Administrative Control and Early Diagnosis of Tuberculosis, George Thomas Palmer, Springfield. Discussion opened by A. F. Kleutgen, Chicago.

4. Epidemic Meningitis, Archibald Hoyne, Chicago. Discussion opened by Paul G. Pomeroy, Ottawa.

5. Modern Rural Health Practice, Arthur T. McCormack, State Health Officer, Louisville, Ky. (By Invitation.) Discussion opened by A. H. Kegel, Chicago.

6. Silicosis and Its Control, R. T. Pettit, Ottawa. Discussion opened by S. C. Beach, Chicago.

Thursday Morning, May 22, 1930

9:00 A. M.—1. Diphtheria and Scarlet Fever, Arlington Ailes, LaSalle. Discussion opened by H. O. Orvis, Winnetka.

2. Smallpox, Charles Nelson, Springfield. Discussion opened by I. D. Rawlings, Chicago.

3. The Relation of Diseases of Animals to Public Health, Robert Graham, Urbana. Discussion opened by Thomas G. Hull, Chicago.

4. Domestic Mechanical Refrigeration in Relation to Public Health, A. H. Kegel, Chicago. Discussion opened by Joel I. Connolly, Sanitary Engineer, Chicago. (By Invitation.)

SECTION ON RADIOLOGY

I. S. Trostler, *Chairman*

Henry W. Grote, *Secretary*

Wednesday, May 21, 1930

Y. M. C. A.

9:00—Call to order, appointment of Committees and Business Session.

9:20—Further Observations on Irradiation of Tonsils since 1924, Harry D. Magee, Peoria. Discussion opened by Harold Watkins, Bloomington.

9:40—Roentgenological Aspect of Persistent Thymus, Wilbur H. Gilmore, Chicago. Discussion opened by Maurice L. Blatt, Chicago.

10:00—The Value of the Lateral Chest, Chester H. Warfield, Chicago. Discussion opened by P. R. Cassellas, Chicago.

10:20—Some Notes on the Early Diagnosis of Carcinoma from the Blood Serum, Howard M. Jamieson, Chicago. (By Invitation.)

10:40—A New Method of Diagnosis Based Upon Diffraction Analysis of Tissue Structure, C. S. Bucher and G. L. Clark, Ph. D. Champaign. Discussion opened by Aaron Arkin, Chicago.

11:00—Genito-Urinary Anomalies, Otis W. Britt, Waterloo, Iowa. (By Invitation.)

11:20—Osseous Dystrophies-Fibrocystic Disease and Paget's Disease, Edward L. Jenkinson, Chicago. Discussion opened by Chester H. Warfield, Chicago.

11:40—Some Remarks on Radiation Treatment of Toxic Goiter, Isaac Gerber, Providence, Rhode Island. (By Invitation.)

Section Dinner, time and place to be announced.

Thursday Morning, May 22, 1930

Y. M. C. A.

9:00—Business session, reports of committees and election of officers.

9:15—Chairman's Address, I. S. Trostler, Chicago.

9:30—A Device with Fixed Pressure and Volume Limits for the Insufflation and Lipiodol Methods, for Determining Tubal Patency, Harry M. Jones, Chicago. Discussion opened by Robert A. Arens, Chicago.

9:45—Compound, Comminuted Infected Fractures, Treated With and Without Splints, Alden Alguire, Belvidere. Discussion opened by F. Flinn, Decatur.

10:00—The Ultimate Care of Cancer, E. G. C. Williams, Danville. Discussion opened by B. H. Orndoff, Chicago.

10:20—The Pathological Cervix and Its Treatment, B. H. Orndoff, Chicago. Discussion opened by E. G. C. Williams, Danville.

10:40—The Value of the X-Ray Examination of the Appendix, James T. Case, Chicago. Discussion opened by Otis M. Walker, Chicago.

11:00—The Effects of X-rays on the Normal Thyroid and Parathyroid of Animals, Andred C. Ivy, Otis M. Walter and R. J. Anson, Chicago. Discussion opened by C. S. Bucher, Champaign.

11:20—Quo Vadis?, Fred S. O'Hara, Springfield. Discussion opened by Henry W. Grote, Bloomington.

11:40—Diagnosis of Foreign Bodies in Bronchus and Esophagus, Charles F. Bowen, Columbus, Ohio. (By invitation.)

12:00—Introduction of New Officers to Section.

RULES GOVERNING THE PRESENTATION OF PAPERS

All Papers read by members shall be limited to twenty minutes and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion on any one subject.

All papers read before the Society or any of its Sections shall become the property of the Society. *Each paper shall be deposited with the Secretary of the Section when read and the presentation of a paper to the Illinois Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the ILLINOIS MEDICAL JOURNAL.*

A Paper not heard in its scheduled turn shall be held subject to the call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

All subjects shall be confined strictly to the subject in hand.

No Paper shall appear in the printed transactions of the meeting unless read in full or in abstract.

(From the By-laws of the Illinois State Medical Society.)

EXHIBITORS AT 1930 ANNUAL MEETING

American Medical Association, 535 North Dearborn Street, Chicago.

American X-Ray Corporation, 711 West Lake Street, Chicago.

A. S. Aloe Company, 1819 Olive Street, St. Louis, Missouri.

The Burdick Corporation, Milton, Wisconsin.

Cameron's Surgical Specialty Company, 666 West Division St., Chicago.

The DeVilbiss Company, Toledo, Ohio.

De Puy Manufacturing Company, Warsaw, Indiana.

H. G. Fischer Company, Inc., 2337 Wabansia Avenue, Chicago.

General Electric X-Ray Corporation, 2012 W. Jackson Blvd., Chicago.

Gerber Products Division, Freemont Canning Company, Freemont, Mich.

Horlicks Malted Milk Corporation, Racine, Wisconsin.

Huston Brothers Company, 185 North Wabash Ave., Chicago.

Kellogg Company, Battle Creek, Michigan.

Illinois State Department of Health, Springfield, Illinois.

Illinois Tuberculosis and Health Association, Springfield, Illinois.

Medical Protective Company, 360 North Michigan Blvd., Chicago.

Mellins Food Company, 177 State Street, Boston, Mass.

Merck and Company, New York City.

MacMillan Company, 60 Fifth Avenue, New York City.

M. & R. Dietetic Laboratories, Columbus, Ohio.

V. Mueller and Company, Ogden Avenue and Van Buren St., Chicago.

Orchard Hill Camp, St. Charles, Illinois.

Chas. H. Phillips Chemical Company, 170 Varick Street, New York City.

Petrolagar Laboratories, 536 Lake Shore Drive, Chicago.

Post-Graduate School of Surgical Technique, 2512 Prairie Avenue, Chicago.

Sharp & Smith, 65 East Lake Street, Chicago.

W. B. Saunders Company, West Washington Square, Philadelphia.

Arthur L. Shreffler, Joliet.

Silver Cross Hospital, Joliet.

St. Joseph's Hospital, Joliet.

Standard Pharmacal Company, 847 W. Jackson Blvd., Chicago.

E. P. Sloan, Bloomington.

Swan-Myers Company, Indianapolis.

Sutliff & Case Company, Inc., Peoria.

Tailby-Nason Company, Boston.

Williams Iowa Supply, Iowa City, Iowa.

Wm. W. McMaster, Peoria.

Zimmer Manufacturing Company, Warsaw, Indiana.

SCIENTIFIC EXHIBITS

The American Medical Association will have an extensive exhibit showing the work the Association is doing for the physicians of America. The following departments of the Association will be represented in the exhibit:

1. Chemical Laboratory.
2. Council on Pharmacy and Chemistry.
3. Bureau of Health and Public Instruction.
4. Bureau of Investigation.
5. Bureau of Legal Medicine and Legislation.
6. Council on Physical Therapy.
7. Council on Medical Education and Hospitals.
8. The Library.
9. HYGEIA—the Health Magazine for the public at large.

Such an exhibit should well merit the time of everyone at the meeting to look things over carefully and see for themselves why it is to the advantage of every practicing physician eligible to membership in a County Medical Society, to also become a Fellow of the American Medical Association.

The Illinois Department of Public Health will have an exhibit showing many interesting things, to show what Illinois is doing to aid in the control of disease. There will be a unit exhibit on pneumonia, giving the complete story of that disease, so far as possible, the history, seasonal peculiarities, pathology, bacteriology, epidemiology, etc., shown by graphs, actual specimens, X-Ray films, etc.

Similarly, by a series of charts, will be shown the mortality rates from Typhoid, Tuberculosis, Diphtheria and the puerperal causes and the infant mortality rate. Graphs will show the prevalence of smallpox in Illinois as compared with that of other states and foreign countries. This exhibit should prove to the most conservative that Illinois has and is still making progress in the effort to minimize disease within the state.

The Illinois Tuberculosis and Health Association will have an educational exhibit showing the work the Association is doing to help in the eradication of "the Great White Plague." This Association is a cooperative organization which realizes the necessity of professional guidance in their work.

St. Joseph's Hospital, Joliet, will show the work the institution is doing by the following:

1. Scientific material concerning the work of the hospital.

2. Exhibition of rare pathology specimens.

3. Presentation of some unusual X-Ray films.

Silver Cross Hospital will also have an interesting exhibit (Joliet).

1. An interesting pathological display.

2. Unusual X-Ray films of general interest.

3. A display showing the work of the institution and the services rendered by a modern hospital.

These hospital exhibits are intended to show the physicians the readiness at all times of hospitals to cooperate with the medical profession and that their problems are entirely mutual.

Dr. Arthur L. Shreffler, Joliet, will have an exhibit showing the following:

1. Microscopic slides showing various types of goiter tissue.

2. Gross pathologic specimens of thyroid.

3. Parathyroid specimens.

4. Drawing showing the important points in technique of thyroidectomy.

5. Motion pictures of thyroid operations.
Dr. Harry W. Woodruff, Joliet, will show:

1. Operations on the eye muscles.
 - a. For concomitant Strabismus.
 - b. Paralytic Strabismus.
 - c. Secondary Strabismus.

These will be shown with a still film projector.

2. An exhibit of steel localized with the Sweet Localizer and removed with the Giant Magnet.
3. X-Ray pictures of Mastoid Cases.

Other interesting Scientific Exhibits will be shown during the meeting.

NOTES ON EXHIBITS

The American Medical Association will have an interesting Educational exhibit showing the work the Association is doing for the physicians of the country. Among the exhibits will be some very interesting material from the Bureau of Investigation. The Council on Pharmacy and Chemistry, the Council on Medical Education and Hospitals and other Departments of the Association will be represented likewise. This exhibit should be of intense interest to all members and guests at the meeting as an evidence of the great work the Association is doing. *HYGEIA*, the reliable Health Magazine for the Laity, will be featured in the exhibit and those not familiar with this interesting Journal should be thoroughly convinced that it has an appeal which should place it on the table of every professional office in America.

The American X-Ray Corporation will exhibit a model of an X-ray unit that, since its introduction of fairly recent date, has proven of exceptional value. These small units are so built that the X-Ray plant, consisting of transformer and control as well as the full range tube stand, X-Ray tube and table, if desired, are all as one unit. There is eliminated the necessity of attaching aerial leads to the ceiling, as these aerial leads are also a part of the unit. The numerous methods of assembling the apparatus enables the individual doctor to have his requirements thoroughly complied with, with a minimum space consumption and a minimum investment. American X-Ray Corporation manufacture apparatus of larger capacities and are able to thoroughly meet the requirements of the largest to the smallest institution. The factory and main offices are located in Chicago and there is a permanent invitation to the profession to call at the factory any time it is convenient.

The A. S. Aloe Company of St. Louis, Chicago and Los Angeles, will have an interesting exhibit showing an appropriate layout of the latest in Physio-Therapy Apparatus and White Steel Furniture. A special feature of the Aloe Exhibit will be the showing of the moderately priced "GRAVES" Hydraulic Lift Office Chair-table and a complete line of Chrome Plated instruments. The Aloe representatives will be pleased to show anything to physicians that they may be par-

ticularly interested in and to meet many of their former friends.

The Burdick Corporation, Milton, Wisconsin, will exhibit a complete line of Light Therapy Equipment. This will include Air and Water-cooled Quartz Lamps and a complete line of Zoalite Infra-red Lamps. A feature of especial interest will be the new type reflector for the Air-cooled Lamp which approximately doubles the ultra-violet intensity as compared with reflectors of former types. This new type reflector can be supplied for any previous model of the Burdick Air-cooled Lamp. Representatives from the Burdick Branch Office at Chicago, from the Dick X-Ray Company and from the V. H. Hurley Company will be present at the Burdick booth.

The value of "High Visibility in Diagnosis and Surgery," as applied to all phases of major and minor diagnostic, operative and therapeutic procedure will be fully demonstrated at the clinical exhibition of Cameron's Surgical Specialty Company, Chicago, in space No. 11. The demonstration of Cameron's Cauteries will also be a unique feature of the exhibit.

The DeVilbiss Company, Toledo, Ohio, will show a complete line of DeVilbiss professional and patient sprays. All DeVilbiss professional sprays are chromium plated, which prevents tarnishing and makes their good appearance more permanent. The tips are now turned out of bar steel and the threads are more accurate and strong. The patient atomizers have been redesigned so that heavy oils may be sprayed with but little pressure. The DeVilbiss Company will be pleased to show these new features and their entire line to all physicians interested in these necessary articles.

H. G. Fischer and Company, Inc., will exhibit some very interesting equipment, which should appeal to all interested in electrical accessories. There will be a new, simple and inexpensive Surgical Tissue Cutting Outfit, a Combination Radiographic and Fluoroscopic Unit with every approved and necessary feature incorporated in the best machine of its kind, but sold at a low price; diathermy portables and diathermy cabinets; a combination Galcanic and Contractural Currents Generator with a distinctly new cabinet and finish, as well as ultra-violet lamps, accessories and the like. There will be several representatives of the Company at the exhibit who will be pleased to render any possible service to those interested in physical therapy or X-Ray apparatus.

SEE THE ELECTROCARDIOGRAPH IN OPERATION AT THE VICTOR BOOTH

Only those who have operated one of the older type electrocardiographs can appreciate the simplicity and ease of operation of the instrument on demonstration at the booths of the General Electric X-Ray Corporation, formerly Victor X-Ray Corporation. By a method similar to radio amplification, it "steps up" the feeble heart current to a point where it will actuate a sturdy Galvanometer, thereby eliminating the fragile quartz string required in former types because of the infinitesimal actuating current. No longer need a hospital be

wired for electrocardiographic service—this instrument being entirely self contained, is simply wheeled to the patient's bedside. No special technical skill is needed to operate it; anyone can produce cardiograms of excellent diagnostic value after an hour's instruction. In addition to the electrocardiograph there will be shown a representative collection of Physical Therapy apparatus, also an interesting exhibit of radiographs.

DePuy Manufacturing Company of Warsaw, Indiana, will exhibit many new models in Aluminum X-Ray Splints, in Booth No. 22. This company having served the profession with pleasure for over a half century, makes a line of splints which meet with the approval of radiographers and surgeons over the entire country. DePuy Splints are transparent to the X-Ray, are amply ventilated and are a product of quality at a moderate price. Physicians recognize the merits of a standard product and have confidence in a house which serves them well. The DePuy exhibit will be in charge of their Illinois representative, the well known red-head, W. D. Bates, who will explain the use of splints for any fracture problems at their booth.

Gerber's Unseasoned, Strained Vegetable products, the New A. M. A. accepted foods for infant feeding and special diets, will be shown again this year in Booth No. 5. These foods have attracted wide attention in medical circles because of the opportunity they offer for more perfect control of the infant vegetable diet and being unseasoned, can be used in a wide variety of adult diet cases. Attendants at the booth will be pleased to explain their use, preparation and any other information that may be desired concerning these Strained Vegetable Products.

Huston Brothers Company, one of the oldest Surgical Instrument Houses in the country, will exhibit an exceptionally good and interesting line of instruments in Spaces 16 and 28. Their line will include practically everything on the market in the line of Chrome Plate and rustless material. Among other new and interesting instruments shown will be a new Tonsil Snare that works with great efficiency without a wire or a cutting blade. They will exhibit a "Whisper-fone," a small electrical hearing instrument imported from England, said to be the smallest device of its kind and highly efficient. A Tonsil Tier which holds the finest catgut, without danger of breaking and making an automatic tie; a new Abdominal supporter, giving constant and gentle upward pressure, will be among the many new and interesting devices in the Huston Exhibit.

Horlick's Malted Milk Corporation are again among the exhibitors and plan unusual activities in the interests of their products, Horlick's, the original Malted Milk, natural and chocolate flavors, powder and tablet form and Horlick's Malted Milk Modifier, a maltose and dextrin product. The Horlick Exhibit will occupy Space No. 51 and their representatives will be pleased to greet all in attendance at the meeting.

The Illinois State Department of Health will have a highly interesting Educational Exhibit showing the

work the Department is doing to improve Health Conditions in Illinois. The State Health Department asks the cooperation of all physicians in the carrying out of their work, realizing the necessity of perfect cooperation as a factor in the success of their plans.

The Illinois Tuberculosis and Health Association will have an Educational exhibit, showing the work the Association is doing to help in the eradication of the "Great White Plague." This Association is a cooperative organization, which realized the necessity of professional guidance. The new Executive Secretary of the Association, Mr. W. P. Shahan, who recently came to Illinois from Indiana, where he was doing similar work, is anxious to meet the members of the Illinois State Medical Society and assure them of his desire to work with the Medical profession.

Physicians who are interested in a coffee which may be used in special as well as in normal diets are invited to visit Booth No. 47, where the Kellogg Company of Battle Creek, Michigan, will have a display and demonstration of Kaffee Hag Coffee and other Kellogg products. Kaffee Hag is real coffee, from which it is said 97 per cent of the caffeine has been removed. Visitors at the booth will be served with this caffeine-free coffee and Kellogg's all-bran muffins. Diet suggestions and Prescribed Diet lists will be distributed.

Mead Johnson and Company will have on exhibit its complete line of infant diet materials including "Mead's" Dextri-maltose; Mead's Cod Liver Oil; Mead's Viosterol; Mead's Reolac; Mead's Non-Curdling Powdered Protein Milk and Mead's Non-Curdling Powdered Lactic Acid Milk. There will be for the examination of physicians a complete line of Mead's services such as diets for older children, height and weight charts, etc., all of which are free to members of the medical profession in any quantity desired. Their Illinois representatives will be on hand to meet their friends and to discuss the application of the Mead products to infant feeding problems.

All members of the Illinois State Medical Society and friends are cordially invited to visit Booth No. 34 of the Medical Protective Company, Mr. M. L. Allen of the Peoria office will be delighted to have you call, whether merely to say "hello" and renew old acquaintances or to satisfy yourself on some question of malpractice protection. Consider him at your service and feel free to call upon him for anything which may contribute to making this the most pleasant and successful society meeting you have yet attended.

No argument is needed to emphasize the advantage to the physician of a thorough knowledge of any product that he deems worthy of frequent or only occasional use in the work of his profession. This is the thought that prompts the Mellins Food Company to have an exhibit and the purpose is to give physicians an opportunity to acquire full and complete information relative to the source, nature and amount of food elements present in Mellins Food and to discuss the many conditions where Mellins Food may be used to

the advantage of the patient and the satisfaction of the medical attendant.

SIMILAC, a completely modified milk, is being exhibited at Booth No. 25. Representatives of the M. and R. Dietetic Laboratories will be pleased to answer any questions pertaining to the use of SIMILAC either as a complement to the breast feeding or as a complete diet for infants deprived of breast milk.

V. Mueller and Company of Chicago will have a large exhibit of more than general interest. Many new patterns of surgical instruments that have been developed during the past year, particularly for bone work. The Eye, Ear, Nose and Throat specialist will find much of interest by way of some new types of instruments for this particular work. V. Mueller and Company as Chicago representatives for Wappler diagnostic instruments will also demonstrate the new Wappler line of ophthalmoscopes, auriscopes, laryngoscopes, etc., as well as new models of cystoscopes. Among these is the smallest cystoscope yet designed for use on children.

The Orchard Hill Camp situated on the beautiful Fox River, just north of the St. Charles Country Club, is an exclusive camp for the younger children. It is interesting to note that practically half of the children at the camp are the sons and daughters of physicians who evidently appreciate the best for their children. The camp is under the personal direction of Dr. R. J. Lambert and Dr. Edith B. Lowry. Physicians interested in the welfare of children should not fail to visit Booth No. 3.

At the Petrolagar Booth there is an active demand for the set of drawings by Tom Jones of the University of Illinois illustrating various types of constipation and bowel conditions. Sets are given free or mailed. They are helpful in consultations with patients and for comparison with roentgenograms. These pictures are distinctive and somewhat different from the usual anatomical drawings of the bowel in that they show the perspective. They are not flat.

Space No. 4 is occupied by the Chas. H. Phillips Chemical Company, makers of the well known products, PHILLIPS MILK OF MAGNESIA, the ideal laxative-antacid, PHILLIPS DENTAL MAGNESIA, a superior tooth paste and PHILLIPS PHOSPHOMURIATE OF QUININE, a dependable appetizer and tonic. It will be worth your while to visit the Phillips Booth and investigate these preparations.

The exhibit of the Post-Graduate School of Surgical Technique comprises charts and drawings upon subjects of interest in surgical anatomy and surgical technique. A projection apparatus shows slides of various surgical procedures as taught and demonstrated in the school. A number of courses are offered in general surgery and in the various surgical specialties.

Sharp and Smith, Chicago, who have been in the Surgical Instrument business for more than eighty-five years, will exhibit a representative line of high grade instruments comparable to their many years of leadership in the Surgical Field. They will be pleased to

greet their many friends and demonstrate their many instruments at Booths Nos. 37 and 38.

W. B. Saunders Company, publishers of Philadelphia and London, will exhibit a complete line of all of their titles. Among the newer and more important of these will be Beckman's new Treatment in General Practice, Campbell's New Orthopedic Surgery, Christopher's New Minor Surgery, Graham's new three-volume work on Surgical Diagnosis, the new Mayo Clinic Volume, new editions of Boyd's Surgical Pathology, Blumer's three-volume work on Bedside Diagnosis, Granger's Physical Therapeutic Technique, Jackson and Coates on Nose, Throat and Ear, Wechsler's Neuroses, Norris and Landis' Diseases of the Chest and Physical Diagnosis and the American Illustrated Medical Dictionary.

The Standard Pharmacal Company, 847 West Jackson Blvd., Chicago, specializes in the manufacture of pharmaceuticals for the dispensing physician. Their products are made for and sold only to physicians and their service is of particular interest to the physician who dispenses either a part or all of his medicines.

Sales are made exclusively by mail and low list prices and discounts give buyers an opportunity for a substantial saving. The products consist of U. S. Pharmacopoeia and special formula tablets and liquids. Their display will consist of U. S. P. formulary preparations.

Complete catalogue with therapeutic index and samples will be available to any physician visiting the exhibit, or makes request by mail. The exhibit will be in charge of Dr. J. P. Eagan, who will give all information desired relative to the policy or products of the manufacturer.

Sutliff and Case Company, Inc., of Peoria, will exhibit a representative display of their line of Pharmaceutical Specialties, Solu-Caps, Hypodermic tablets, Ointments, Compressed tablets, Fluid-extracts, Tinctures, etc., including a special section devoted entirely to their well known products Thiocyan-Elix, Kolagog, Phytosalicyl, Tin-Ox. The firm especially requests members and visiting physicians to register at their booth, so that a memento of their visit may be mailed to their home address. Mr. Al Gillig, dean of their sales force, and Mr. H. J. J. Norman, their pharmaceutical chemist, will be in constant attendance at their booth and will be pleased to welcome their many friends and others.

Interest in Bacteriophage will undoubtedly draw many physicians to Booth No. 19, where members of the scientific staff of Swan-Myers Company will furnish information and literature on this new development in Biological Therapy. The Swan-Myers Laboratories were the first to be licensed by the United States Government for the manufacture of Bacteriophage and are at present the only laboratories in the country to supply Bacteriophage commercially. They will also have interesting displays of Ephedrine Products, including Swan-Myers Inhalent Number 66, Pollen Extracts and Parasylla, Swan-Myers, a new mechanical laxative that combines Psyllium seed jelly and mineral oil in a pleasing emulsion.

BIG COD FROM NORWAY.—During the fishing

season of 1928 a cod of record proportions was taken from the Lofoten waters of Norway for Nason and Company, a/s, the Norwegian subsidiary of Tailby-Nason Company of Boston. This splendid fish, four feet eleven inches long and weighing 30 kilos will form an interesting part of the exhibit of Nason's Palatable Cod Liver Oil, "The Better Tasting Kind," produced at Nason's plants in Norway, at Booth No. 26. Other important features of the exhibit will be the white rats used in testing the oil for its vitamin activity and roentgenographs of the leg bones of rachitic rats showing the progress of the healing induced by Nason's Cod Liver Oil.

Williams Iowa Supply Company, the reliable Surgical Supply Dealers of Iowa City, Iowa, will have an interesting exhibit in Space No. 17. Representatives of the firm will be present to show the many numbers included in the exhibit and to greet their old friends as well as to meet many new ones.

W. W. McMaster, successor to the well known McMaster and DeKroyft Company of Peoria, will exhibit a large line of Pharmaceuticals, Instruments and Office Equipment. This firm, which dates back to 1860, is always anxious to fill the wants of the medical profession to which they have catered so many years. The exhibit will be shown in Booth No. 21.

ZIMMER Fracture Equipment including Aluminum X-Ray splints, Fracture beds, Extension and suspension apparatus, etc., will be exhibited in Booth No. 33. Representatives of the company will be pleased to answer any questions pertaining to the use of these interesting and essential accessories in the treatment of fractures. Their recent additions to the line formerly shown will be of especial interest to all members of the medical profession.

A cordial invitation is extended to all present at the meeting to visit the MacMillan Booth, where will be found many interesting and important books. Among them are Friedenwald's "Pathology of the Eye," in which the author groups together the reactions of the various parts of the eye to similar injuries and disease processes and points out wherever the analogy has seemed apt the similarity between ocular disease and disease of other organs.

The fourth edition of McCollum and Simond's "The Newer Knowledge of Nutrition," which brings the subject up to date from the standpoint of fundamental research: Terry's "Introduction to the Study of Human Anatomy," planned to arouse and develop a critical attitude in the student by constantly requiring the verification of textbook descriptions with the evidence of the dissection before him and by proposing concrete questions to be answered and recorded by observations on the cadaver; Rolleston's "Life of Sir Thomas Clifford Allbutt," a study of the life of this eminent physician being a review of the progress of medicine in the last half of the 19th Century and the first quarter of the 20th Century. These are only a few of their newer books, but they will be with the elaborate MacMillan display.

Correspondence

THE ONLY THING THAT HAS NOT GONE UP IN PRICE IS MEDICAL CARE

Brooklyn, N. Y., April 1, 1930.

To The Editor:

Again Compulsory Health Insurance is showing its head. In New York State as Assembly Bill No. 9 and the Journal of the American Medical Association, Vol. 94, No. 13, Mar. 29, 1930, page 1014, an article by a Michael M. Davis, Ph. D., Director of Medical Services of the Julius Rosenwald Fund, with an array of figures as to cost of Medical care which, like all statistics, are part guess and part arithmetical calculation and part conjecture. It says that the total cost of medical care is \$2,841,000,000—which, for the 120,000 000 people in the United States means \$24 per person per year. It may be interesting as a counter argument to this "feeler" for Compulsory Health Insurance for the workingman and Voluntary Health Insurance for the rest, to note that the average family in this country, whether it keeps a budget or not, knows that the cost of what they eat and drink and that wherewith they are clothed has gone up, up, up, since 1919 and this writer tells us that the cost per person for medical care, today is \$24—and in 1917 the N. Y. State Hospital Health Commission estimated the (then) cost as \$23.48 while the U. S. Bureau of Labor statistics in 1919 made the cost \$26—and the average of those two sources of information would be \$24.74. It really would appear that this writer is all wrong and that the only thing *that has not gone up in price is Medical care* and, if we were to abstract from his calculations the \$855,000,000 for maintenance and annual capital expenditures for hospitals and clinics, which comes from "Federal, State and local taxes, philanthropists, etc." we Medical men would make an even better showing.

The writer suggests the same old propaganda about the calamity of sickness falling "unevenly and unexpectedly" and suggests "payments by installments or insurance, or medical loans, like the automobile deferred payment plan and tells us about the Compulsory and the Voluntary Insurance of Germany, he does not say one little word about the one thing that this type of

socialized medicine has done to Medicine by robbing patient and Doctor alike of the mutual confidence and interest that can not survive cattleization of the sick and penalization of the agencies of healing; how, in the name of economics, can any financial measure, initiated or administered by governmental agencies, directly or through Public Service Commissions or even "Uplift" organizations "distribute and stabilize an uneven and uncertain burden" save by applying the pruning knife to the one place that is not organized to resist—the practitioners who in the home and in the hospitals and clinics must be compelled to render service as a wage earner of a "Fund" getting the fat if he plays politics and getting the lean otherwise, but in either case surrendering the one thing that makes Medicine glorious—the heart-sympathy with the sick.

There are those who will register horror at the suggestion that Doctors, of all people, should become sordid—BUT—1400 Doctors struck in England under this panelization stuff and the English doctors rendered such rotten service as impersonalized cogs in a political machine that the English Registrar-General in 1922 (*N. Y. Times*, April 2, 1922) warned his government that the deaths of women, in child-birth, from sepsis, was increasing alarmingly. You can not charge THAT to the war; you can not believe that the atmosphere of England had become a menace to pregnant British women; there was one cause, sloppy care of cattleized sick by panelized doctors from which may the good God and an interested vigilant Medical profession and press save this beloved country of ours.

JOHN J. A. O'REILLY, M. D.

A COMPLIMENT TO THE ILLINOIS STATE MEDICAL SOCIETY

THE CIVIC FEDERATION

Chicago, April 15, 1930.

To the Editor: Permit me to compliment the Illinois State Medical Society upon the excellent spirit and tone of the letter that appeared in the April issue of the ILLINOIS MEDICAL JOURNAL addressed to candidates for the General Assembly by Dr. J. R. Neal, chairman of the Legislative Committee of the Society.

The Civic Federation has for years maintained that the welfare of the public depended upon an unpugged and open-minded legislative body and

that the proper way to get legislative results is by presenting facts, figures and logical arguments to the legislature thus composed.

We are in hearty agreement with you upon the subject of the undesirability of further extending "federal aid" to state and local governments for any new projects, in which class we include the Sheppard-Towner act.

DOUGLAS SUTHERLAND,
Secretary.

Miscellany

ARE INSULIN AND HYDROCYANIC ACID ANTIDOTES?—S. Rosenberg (*Med. Klin.*, 22:1622, 1926).

In animal experimentation, it is demonstrated that under the protection of insulin an amount of cyanide of potassium was tolerated, with symptoms of poisoning passing over quickly, which would have resulted fatally within a few seconds without the support of insulin. Insulin therefore merits consideration as antidote for hydrocyanic acid. If, indeed, in the frightful intensity and rigidity of cyanide of potassium effect, medical assistance can be instituted in time, is another question.

CONCERNING INSULIN SENSITIVENESS OF TUBERCULOUS PATIENTS. — R. Ahlenstiel (*Deutsche med. Wchnschr.*, 52:1163, 1926).

In active tuberculosis, the author found a slighter sensitiveness to insulin than in other infections and than in inactive or only slightly active pulmonary tuberculosis. Exudative and productive forms are not differentiated. It appears possible to interpret this behavior of active tuberculosis as the expression of an insular apparatus, especially well preserved by long "inanition action" and functionally efficient, such as the patient with acute infection had not exhibited it.

ISULIN AND NON-DIABETICS.—Jaksch-Wartenhorst (*München. med. Wchnschr.*, 73:1565, 1926).

The author had excellent results in a series of cases of Glenard's disease. The number of insulin units administered oscillated between 2460 and 3560. In all cases, very significant increases in weight occurred of from 4.50 to 10.20 kgm. Appetite improved; the subjective findings improved. It is self-evident in diseases of this kind that other measures must also be taken into consideration, such as, washing out of the stomach, suitable dietetic regulations, vibratory massage, fresh air treatment, in any case, fixation of the kidney by surgery.

In Basedow's disease also did the author test insulin; individual symptoms of this disease were set aside and many were improved.

Insulin also had a very favorable influence on icterus in carcinoma of the liver. The decrease of icterus in all cases, the disappearance of pruritus in several cases and the improvement of general condition in the majority of the cases were striking. In individual cases transitory gains in weight were noted. Naturally, a

cure was neither expected nor obtained; but in a desperate disease of this kind, such as the carcinomatous diseases of the liver are, a harmless remedy is very desirable. On the basis of his observations, Jaksch believes that a broad field opens up for insulin therapy in the realm of liver affections of the most diverse kind, to combat a very annoying symptom, icterus with its sequelae.

ON THE THEORY OF INFANTILISMUS DYSTROPHICUS UNIVERSALIS S. CHETIVISMUS.—Ad. Oswald (*Schweiz. med. Wchnesch.*, 56:756, 1926).

Description of a case which concerned a child backward in his general development owing to prolonged digestive disorders, in whom no symptoms of hypothyroidism were to be noted. Thyroid therapy was, nevertheless, introduced by way of trial; under this treatment, the child took on 4 cm. in body length within five months, with simultaneous disappearance of digestive disturbances.

In a second case, concerning a 7-year-old child, digestive disturbances and constipation were very frequent in the first three years. Since the third year of life a striking standstill of growth appeared. The child showed the characteristics of universal dystrophic infantilism, but presented no pronounced myxedematous characteristics. For hypothyroidism, only coarse skin, dry hair and chronic constipation could be brought into the question. Here the thyroid medication had an important result also and there appears to arise from these observations the thought that dystrophic universal infantilism may be the expression of an infantile myxedema. It is recommended to introduce thyroid medication in cases similar to the ones described and to continue this treatment for at least three months, before giving it up as unsuccessful.

RELATIONS BETWEEN ALBUMIN SUGAR AND KETONE BODIES IN THE BLOOD OF DIABETICS TREATED WITH INSULIN.—D. Liotta (*Riforma med.*, 42:41, 1926).

The abnormal accumulation of acetone bodies in the blood of depancreatized dogs and of diabetics is always accompanied by a diminution of albumin sugar. Very low value of albumin sugar always corresponds to an acetonemia and vice versa.

The insulin always effects an increase in albumin sugar of the blood and simultaneously a marked degree of acetonemia. The different high albumin sugar pictures in diabetics could be regarded as indicator for the degree of acetonemia in each individual case.

Among the many hypotheses which have been offered to explain this relationship between albumin sugar and acetone bodies that one appears most plausible to the author which sees in albumin sugar or a derivative related to it in the tissues the carbohydrate necessary for the normal oxidation of acetone bodies.

ON THE CHARACTER AND PATHOGENESIS OF PAGET'S BONE DISEASE.—G. Morone (*Il Policlinico, sez. prat.*, 33:987, 1926).

Aside from the rare, infectious origin of Paget's bone disease (up to the present indicated only once), etiologically the co-operation of two kinds of factors

come into consideration for this disease—a disposing, apparently constant factor, and an inciting factor.

Among the disposing factors, one of endocrine nature is very worthy of notice, a complex hormonal disturbance of pluriglandular type—or more exactly, endocrine-sympathetic nature, owing to its frequency and concordance with the hitherto existing knowledge of the metabolism of the bones.

The other disposing factor is formed by neurodystrophic changes.

As inciting causes may be mentioned—intoxications, trauma, but not syphilis.

THE INFLUENCE OF INSULIN ON ACIDOSIS IN HYPEREMESIS.—H. Seidl (*München. med. Wchnschr.*, 73:1471, 1926).

Report concerning ten cases of hyperemesis which were treated with insulin. In 7 cases the examination for acetone and diacetic acid turned out positive. Under insulin administration in the first months of pregnancy, the body weight rose steeply, while the acetone content of the urine sank rapidly. In several cases, when no insulin was given, the increase in weight was soon lost, the acetonuria again rapidly assumed its former height, whereby the purely substitutional character of insulin in hyperemesis is shown.

THE INFLUENCE OF INSULIN ON THE BLOOD COMPOSITION IN DIABETES MELLITUS.—F. Rothschild and M. Jacobsohn (*Zeitschr. f. klin. Med.*, 104:70, 1926).

In diabetes, in addition to the blood sugar the cholesterol, organic and inorganic phosphorus and potassium are raised; calcium and the residual oxygen of the blood lie at the upper limits of the normal. After insulin administration, an essential change in the antagonistic system is obtained. The cholesterol picture and with it the lipemia retrocede. The inorganic phosphorus sinks and with great probability is used for the synthesis of hexosephosphoric acid. (Rise of organic phosphorus). The potassium picture in the serum sinks; the calcium rises, that is, the calcium in the tissues is mobilized through insulin and the further breaking up of phosphoric acid hindered. Moreover, the residual oxygen in the serum often sinks after insulin. These observations permit the conclusion that after insulin in diabetes mellitus a vagal effect is probably obtained in the tissue.

THE OPERATIVE TREATMENT OF EXOPHTHALMIC GOITER.—G. Hotz (*Deutsche med. Wchnschr.*, 52:604, 1926).

Stressing the importance of the determination of basal metabolism in exophthalmic goiter, the author describes the operative treatment as follows. The goiter operation is divided into many steps: first, ligation of one or more blood-vessels; later, resection of first one and then of the other half; thereby very considerable decrease of danger. Iodin treatment of exophthalmic goiter is permissible only before the operation and as a short after treatment. The improvement is only transitory, when the goiter remains behind.

Original Articles

MATERNAL STATISTICS

NO OTHER SUBJECT IN THE WHOLE FIELD OF
MEDICINE HAS BEEN MORE WIDELY CON-
SIDERED AND INTENSELY DISCUSSED

CHARLES E. MONGAN, M. D., F. A. C. S.
SOMERVILLE, MASS.

The question of maternal mortality has engaged the attention of the medical profession for centuries. The investigations of Holmes and Semmelweis early in the 19th century gave great impetus to the investigation of this problem. No other subject in the whole field of medicine has been more widely considered and intensely discussed. In every civilized country the highest authorities on the subject of obstetrics have studied the question of maternal mortality with the greatest diligence. Formerly these discussions were confined to the field of medicine. Today the care of the pregnant woman is written about by innumerable lay writers. Especially in the United States of recent date there has appeared in the lay press articles concerning maternal mortality. It is indeed an obscure paper or magazine which has not printed something on the subject. These articles give the impression that the practice of obstetrics is at low ebb in the United States and these lay writers contend that statistics and governmental reports prove that the maternal mortality in the United States is higher than in most foreign countries.

The writer feels that these articles are harmful and untrue, and that statistics properly interpreted prove his contention. These articles also have a tendency to undermine the confidence that the average American has in the ability of his physician. They further give the impression that other civilized countries, especially England and Wales and continental Europe, safeguard the pregnant woman in a way that is lacking in the United States.

The non-medical writer never takes into consideration racial differences, or the social, and economic, conditions prevailing in different nations or parts of a nation. Most European nations are made up of homogeneous peoples who have civilizations peculiar to their own races. It is thought by some writers on the subject that race has a great influence on puerperal mortality.

It is contended by some that the Italian woman is surprisingly free from the risks of the puerperal state. We have only to look in our own country to be convinced of the fact that race does have its influence on child bearing. inasmuch as puerperal mortality obtains a high rate among our colored citizens. The critics of the medical profession do not describe under what rules of procedure puerperal mortality statistics are compiled in the several countries. Although nearly every civilized country is supposed to use the same rules in collecting and compiling vital statistics there is evidence that it is utterly futile, except perhaps in one instance, to try to compare the maternal mortality rates of one country with another on account of the unreliable methods and differences in gathering facts.

Maternal Death or Death in the Puerperal State. The term maternal mortality is a phrase that is never used in vital statistics. The maternal death of the laity is described as a death in the puerperal state. The phrase is defined as follows: "The term puerperal state is intended to include pregnancy, parturition, and lactation; whenever parturition or miscarriage has occurred within one month before the death of the patient the fact should be certified, even though child birth may not have contributed to the final issue."

It would seem that the latter part of this definition contains a proviso and the interpreter of that proviso is a bureau chief in Washington. It is he who decides in doubtful cases whether or no a case should be classified as one coming under the head of a death in the puerperal state. He may be three thousand miles away from the case under consideration. He may even not be a physician or a practicing physician. For the most part physicians do not object to the International list of the causes of death. They realize that a classification is necessary. They do object to an English interpretation, or a French interpretation, or a Swiss, German, or American. interpretation. If any real good is to come from the collection of statistics the standard of interpretation should be the same in all countries using the International list of causes of death. Otherwise our comparison of statistics is useless.

As late as 1893 no two countries in the world employed precisely the same forms and methods for statistical classifications of causes of death. This lack of uniformity rendered the statistical

results of such classifications incomparable. At the session of the International Statistics Institute held in Chicago in 1893 the eminent French demographer, Dr. Jacques Bertillon, presented a draft of a classification for international use. It is the International List of Causes of Death now in use. This list has been adopted by nearly all the civilized countries in the world. Every ten years it is revised by a committee representing all countries who use this method. The meeting for the revision of the classification is generally held the year before the taking of United States census. This revision committee has recently held a meeting and some important changes have been recommended.

Statistics from England and Wales. Much has been written about English Mortality Statistics. These statistics refer only to England and Wales, and although the English statistics are supposed to be classified in the same way as statistics are classified in the United States, the two methods of classification are very different. The English authorities divide the classification—"death in the puerperal state" into two parts. The first class contains those deaths which are directly due to puerperal conditions and the second those deaths associated with the puerperal state, or as Newsholme explains it: "A disease may occur and prove fatal which is not due to pregnancy or parturition, but complicates these conditions. This is so most often in heart disease, next in frequency being pneumonia, influenza, tuberculosis, and Bright's disease. A list of such non-puerperal deaths, 1,086 in number, occurring in the puerperal period is given on page lxxxviii of the Registrar General's Annual Report, 1920. The inclusion of these would have raised the puerperal mortality in England in that year from 4.12 to 5.46 per 1,000 live births."

Estimation of the Rate. "Death at birth," as one magazine writer has called an article, gives the impression to readers that many women died actually giving birth to children. This is a misstatement of fact. United States Census Bureau reports that in 1927, 14,860 women in the birth registration area of United States died in the puerperal state. In other words, some of these women died as the result of abortions, non-criminal, others died as the result of ectopic gestation, others died by giving births or shortly after, others died with diseases connected with lacta-

tion, and still others died of complications, such as influenza, pneumonia, broncho-pneumonia, heart disease, chronic nephritis, not associated with toxemic albuminuria. Our English colleagues would deduct 25 per cent of these deaths as deaths associated with pregnancy,—so that, if we used in the United States the English method, deaths which are now classified as puerperal deaths would not be 14,860 but would be 10,889.

(See p. 20 of Report of 1927, U. S. Census.)

The death rate in puerperal mortality is estimated differently by different countries. The English estimate their rate per 1,000 live births. Massachusetts estimates her rate per 10,000 confinements including stillbirths. Various states in the union have different interpretations of the term stillbirths. Newsholme says, "In international comparisons, the attempt to state puerperal mortality in terms of live plus stillbirths causes confusion, owing to the varying law as to the registration of stillborn births and the varying degrees of enforcement of the law."

The mortality rate in the puerperal state is determined by comparing the number of deaths, per 1,000 or 10,000 confinements inclusive of stillbirths, or as in England per live births. The accuracy of this rate depends on the accuracy of the reporting of births. In considering this method one must keep in mind that if a woman dies during parturition and her baby lives there is a registered birth to correspond to her death, but if a woman dies of ectopic gestation, or of abortion, there is no birth registration to correspond to such deaths. It should be concluded, therefore, that accurate birth registration is necessary. In military Europe birth registration is practically 100 per cent. In United States only within recent years have some states come into the birth registration area. Massachusetts began her birth rate registration in Colonial times, in 1639, and since 1841 registration has been under central control at the State House in Boston. It was not until 1922 that Illinois, Montana and Wyoming joined the birth registration area, in 1924 Florida, Iowa and North Dakota; 1925 West Virginia and the Virgin Islands; and in 1926 Arizona and Idaho. Other states not mentioned above joined at various times until all states are now in the birth registration area.

The United States Census Bureau, although requested by the A. M. A. through a resolution

passed in the house of delegates in 1924 on the petition of the Section of Gynecology and Obstetrics of Massachusetts Medical Society, refused to adopt the method used in compiling English statistics. The English people are perhaps more comparable socially, economically and industrially, with the United States than any other European nation. If there is to be any fair comparison that comparison should be made with English speaking people and one whose civilization is comparable with ours. It is useless to make such comparisons unless the same rules apply in both cases. Let us consider for a moment what effect the English method has upon Maternal Mortality Statistics in England.

In 1920, 1,086 deaths were taken out or about 25 per cent of their total, which made their statistics read in that year 4.12, whereas, if the method of classification used in the United States were used in England, it would bring their rate to 5.46 per thousand live births. The United States authorities issue no information as to the number of "deaths of women not classified to pregnancy and child bearing but returned as associated therewith." It might be very interesting to the American physician to know the name of the diseases causing death among pregnant women, or as the English put it, associated with pregnancy and parturition. As reported in English returns the following are some of the diseases—*influenza* claimed 158; *valvular disease* was given as the cause in 152 cases; *bronchial pneumonia* 30; *lobar pneumonia* 97; *perforating ulcer of the stomach* 14; *appendicitis* 14; *intestinal obstruction* 20; *acute yellow atrophy of the liver* 13; *Bright's disease* 47; *epilepsy* 7; *chorea* 7; *phlebitis* 1; *scarlet fever* 14; *bronchitis* 37; *laryngitis* 1; *pulmonary congestion* 1; *teeth and gum diseases* 2. To anyone who has had any experience in the practice of obstetrics this list gives rise to some meditation. It is fair to ask: Were these pulmonary diseases the result of perhaps infection during parturition? Were they present during pregnancy? Did the cases of perforating ulcers of the stomach and intestinal obstruction have anything to do with a peritonitis that may have been due to puerperal infection? Need the writer go further in describing methods of our English confreres in compiling statistics? One must give the officials of the United

States and the several states credit for a painstaking method in collecting their statistics. The writer's experience in Vital Statistics offices teaches him that his argument would have to be very clear before he could convince a state Vital Statistician that a purely secondary cause of death could be substituted for a primary cause.

In other words Vital Statisticians in the several states are doing their best to interpret the classification as it is stated in the rules.

The Section of Obstetrics & Gynecology of the Massachusetts Medical Society is at present making a survey of "The Incidence of Puerperal Septicemia in Massachusetts," over a period of five years. The following paragraph appears in a report of progress of this survey submitted in 1929: "Among the complicating diseases which are reported in women who died in the puerperal state, were the following: *phlebitis*, *epilepsy*, *infected perineum*, *acute endocarditis*, *acute dilatation of the heart*, *respiratory infection*, *pulmonary tuberculosis*. Other deaths reported in the puerperal state in Massachusetts are: *broncho-pneumonia*, the patient having been delivered seven hours before her death of a seven months fetus; *acute dilatation of the heart*, the mother died before the baby was born; *Type 2 pneumonia following cesarean section*; *la grippe*; *acute pneumococcus peritonitis complicating pregnancy*. This list does not include women who have died in pregnancy or parturition from decompensated heart disease."

In foreign countries this list of diseases would not have been included in the list of deaths in the puerperal state.

THE METHOD OF COLLECTING VITAL STATISTICS IN FOREIGN COUNTRIES

In England the death certificate is a matter of public record practically the same as in the United States, and sometimes hinders a physician from giving his honest opinion.

In Switzerland, of all civilized countries, the method of collecting maternal statistics is probably the most efficient, inasmuch as the name of the physician who signs the certificate is not made public. It is said that by this method the physician has perfect freedom to give a scientifically truthful cause of death. The other data on the death certificate are collected by trained

officials. In the large cities reporting deaths in the Netherlands and Belgium the reporting is more or less strictly done. In the country towns and districts causes of deaths are usually reported verbally by the one who makes the declaration of death.

"I think I have sufficient evidence on which to base the assertion that statistics of death by causes in France is wholly unreliable and misleading. The medical profession lost all interest in reporting causes of deaths when doctors found they were not to have a sufficient fee.

"The method of reporting in Hamburg and Bavaria is uniform throughout. In Prussia and Saxony the method varies throughout. In some cases causes of death furnished verbally to the physician were reported by him to the registry office. There will be no doubt but there will be inaccuracies.

"All such statistics should then be revised by readers and writers on sanitary medical subjects alike with healthy suspicion until the underlying methods and procedures on which they are based have been thoroughly investigated and the statistics stand forth for what they really are and not for what they seem to be.

"In some Prussian provinces and in Saxony, in some instances entire provinces, there is no medical certificate of death signed by physician. In rural areas causes of death are reported verbally to the registrar by the declarant, as in rural France and Belgium.

"This practice is so prevalent in some German states that the mortality statistics by cause for these states, and consequently for the whole nation, must be for a greater or less degree untrustworthy.

"After the physician has signed the certificate of death it is given to a member of the family of the deceased person to be taken to the registry office.

"Summing up the situation in Germany it must be said that the procedure for reporting causes of death is decidedly awkward in Berlin. It is little less so in Dresden and Munich. In Hamburg and Coblenz, where methods are simpler, as well as in Berlin, serious doubt may be raised concerning the reliability of statistics compiled from medical certificates even when issued by the attending physician if the certificate not under seal is presented by him to a member of the family to be taken by him to the registry office." (See *Major Duffield's Thesis*, Massachusetts Institute of Technology, 1923.)

COMMENTS

Puerperal deaths are more numerous in England in the first quarter of the year than in the other quarters of the year. This condition is fairly constant.

The survey in Massachusetts conducted by the Section of Obstetrics and Gynecology of the Massachusetts Medical Society shows a striking similarity to this condition in England.

It seems that it is safer for a woman to have her child in August, September and October in Massachusetts than in February, March or April, and this seems a constant condition over a series of years.

Puerperal Septicemia: In 1928 there was reported to the Registrar of Vital Statistics in Massachusetts 123 deaths from puerperal septicemia; 15 per cent of these deaths were due to septicemia following abortion. All of these deaths were infected before calling a physician or before the case entered the hospital. A few bore some evidence of criminal interference. As criminality could not be proven these fell into the classification puerperal septicemia and not the classification of criminal abortion.

The Registrar General of England and Wales calls attention to the steady increase of deaths from chronic nephritis in the English statistics. As the deaths fall into the classification of deaths associated with pregnancy and child birth they are therefore not included in the death rate from puerperal causes. It might be well to give these deaths returned as chronic nephritis an intensive study.

Oftentimes writers on obstetrical subjects declare with a great deal of vehemence that puerperal deaths are on the increase in the United States. There is at least one U. S. Bureau that refuses to agree with these opinions. United States Census report entitled "Mortality Statistics" (1926), part II, p. 123, gives this timely and sane advice: "There is still a question as to whether puerperal causes of death are an increasing danger to the women of the United States." And still further it makes answer to another question, namely, "How do death rates from puerperal causes per 1,000 live births in the birth registration area of continental United States compare with the rates in foreign countries?" replying, "Here again is a question of the greatest interest and importance which cannot be answered satisfactorily, both because of lack of data in this country and because there is no certainty that all deaths from these causes are classified in the same way in various countries."

It might be well for some of our leading writers on this subject to take to heart and be governed in their remarks by the advice of those men whose business it is to collect scientific data

for scientific men. It is highly probable that the writers who have inferentially at least criticized the obstetrical practice in the United States and held up the puerperal mortality statistics as a bad example of the work of the medical profession, have never heard this advice of the census bureau.

The writer makes the following suggestions:

The medical profession of the United States might well spend its time in comparing the puerperal statistics in the United States of one state with another rather than in giving any attention to statistics from foreign countries. There is variety enough in economic conditions, in social conditions, in racial differences, to furnish all the information that is necessary for the study of this question. More than that, it would be very easy to compare the statistics of our 48 small nations one with the other. All men practicing obstetrics desire to give to the public the best they have. All are agreed that they will follow a reasonable procedure for the reduction of mortality. It is the duty of the profession not to unduly alarm the public with statements based on uncertain, unreliable and untrustworthy figures. The section on Obstetrics and Gynecology of Massachusetts Medical Society has already entered upon a five year program of the study of the incidence of puerperal septicemia. The way in which the profession is supporting the committee in its work is very remarkable and indicates that the rank and file of the profession desire to cooperate in the work. The field for this work is at hand and ready for cultivation. This work can and should be done by state medical societies.

If such a scheme is carried out the medical profession will be able to give a more accurate estimation of puerperal mortality in the United States rather than indulging in "entangling" comparisons with foreign countries.

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SURGICAL OBSTETRICS*

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Surgery plays a very important part in the practice of obstetrics today, especially by the specialists in that branch of medicine. What effect this is having in the practice of the young physician just starting his medical career remains to be seen. New operations, hoping to aid the obstetric patient, present claims and statistics which are so convincing that one may be tempted to give them a trial at the first opportunity. It almost appears as if nature has lost its place in the care of the pregnant woman during her confinement.

When I entered the practice of medicine the treatment of the pregnant woman was very conservative. During the confinement nature was trusted more than today. Interference only came when it was absolutely necessary. Watchful waiting, let nature take her course was the treatment, and how successful this was I am sure the result compares very favorably with the interfering treatment of today.

In Europe, at that time, the Cesarean operation was in the experimental stage. Students returning from there were most enthusiastic because of the apparent good results of the operation, and becoming an associate of one of these students who had been made a Professor of Obstetrics in one of our leading schools, together we were unable to find a case, up to 1895 when he died, which seemed to offer an opportunity to perform this operation. There was an excuse for this. There was then but one indication for this operation, while there are many today; that indication was a pelvis so contracted that a normal-sized fetus could not possibly be born. While pelvimetry was practiced as today and many deformed and moderately contracted pelves were seen, no severe contractions were noticed. Then we must remember that all confinements were carried on in the homes of patients. When the time arrived for interference in the labor, whatever was to be done must be immediate and at home.

When the time arrived for interference the high forceps were applied, and this failing,

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probably a version was attempted and if unsuccessful the case was terminated by craniotomy or embryotomy. It was surprising, however, how much could be accomplished by delay and watchful waiting. After hours of anxiety a moulding of the head would be accomplished that would permit of an easy termination of the labor. Such a case today in a hospital would have terminated hours earlier by a Cesarean operation. Version was often attempted because of the belief that an after coming head would go through a smaller space than the foregoing.

At the time, when we in this country were beginning to study seriously the Cesarean operation, there were two operations being given a trial which for a while promised to be much in favor. Pubiotomy and symphysiotomy were operations which made possible the enlargement of especially the plane of the inlet of the pelvis. One separated the pubic bone and the other separated the symphysis pubis joint. These operations would probably allow of a separation of four to six centimeters and in a moderately contracted pelvis would be enough to overcome the obstruction. These operations seemed to have a valuable place and promised to lessen the number of Cesarean operations. I was very enthusiastic because of the success which attended the few in my practice; soon however, the medical literature reported occasional failures, these reports increasing in number so rapidly of deaths by uncontrollable hemorrhage, failures of severed parts to unite, fractures of ilio-sacral joints, etc. During this time abdominal surgery had not reached that stage of perfection which would permit of the abdomen being closed without drainage. Abdominal hysterectomies were treated by bringing the stump out of the abdomen, closing the wall around it and otherwise fastening it there with cross pins until it came away, or was amputated.

Antisepsis was more practiced than asepsis; but more and more the value of asepsis was being understood and soon the abdomen was closed with impunity and the Cesarean became the operation of choice where pubiotomy and symphysiotomy had been used.

We find many indications for interference with the progress of pregnancy and labor. While such interference may not call for the use of the knife, we must consider them as surgical.

Forceps operations, versions, manual dilatations are just as much surgical operations in my opinion as though a cutting instrument had been used.

There comes a time in early pregnancy when for some reason it becomes necessary to terminate that pregnancy. Whatever means is taken there are always certain dangers. If done by instruments, however careful one may be, the instrument may enter the abdominal cavity. This may or may not do much damage, but it may give the operator considerable worry for a few days.

In neglected cases one may find an incarcerated gravid uterus which calls for operation.

Incomplete abortion also needs the use of instrumental interference.

Ectopic pregnancy is not infrequent. The symptoms are not always easy to differentiate, as it occurs usually in early pregnancy and is plainly a surgical case. Spotting after a missed period, with or without pain, must be given careful consideration. Vaginal examination in such a case to locate the tumor, if an ectopic pregnancy, should only be done when the patient is ready for an operation. Paracentesis in posterior cul de sac would aid in diagnosis if the tube had been ruptured. Referred pain in the shoulders in ruptured tubal pregnancy is often present.

Placenta previa may show symptoms at any time in pregnancy. When a diagnosis of placenta previa is made the indication is for no delay in terminating the pregnancy regardless of the time of pregnancy. The line of treatment is not definite. However, in the interests of the baby, as a general rule the Cesarean operation offers the more favorable termination. As a final proposition, the mother is the one to be considered. Depending upon the location of the placenta and paratae of the patient will depend the treatment. In central previa, regardless of parietes, the abdominal route offers the most favorable termination. In primiparae with undilated cervix, the abdominal route is the best.

There is such a varied opinion in the treatment of placenta previa that it is not to be wondered at that the young physician is very much at sea. Statistics seem to show results equal whether the radical or conservative treatment is used. There are cases, especially in complete

previa, that the abdomen must be opened in the interest of the mother.

Fibroid tumors are often a serious complication in pregnancy, and call for surgical interference frequently. In a series of cases reported by Pierson fibromyomata major operations were done in 21.4% of cases of fibroid for various reasons. These included therapeutic abortion 1, hysterectomy before viability 6, vaginal myomectomy 1, Cesarean and myomectomy 8, Cesarean and hysterectomy 19, abdominal myomectomy 4, induction of labor with bag, followed by Cesarean and myomectomy 1, post partum hysterectomy 1. In another series of what he calls obstetric operation there were versions 9, breeches 20, high and medium forceps 19, a total interference of 46.5%.

The fetal deaths due to the presence of fibromata is from 30 to 40%. Here then we have a condition which occurs in the practice of those doing much obstetrical work and calls often for most careful and thoughtful decision as to method. While the diagnosis is usually definitely established the line of treatment is not so often worked out for the physician in charge.

Durhssen in 1890 recommended that deep incisions be made in the anterior and posterior cervix, or both, in those cases where extensive irregular tears might occur in a rapid delivery with a stenosed cervix. The incisions were to include both external and internal os. As we understand the term today it is but to make a few cuts in the external os when the cervix is effaced.

Durhssen finally gave the name "Vaginal Hysterotomy" to his operation which under certain conditions may be done instead of the low cervical Cesarean. In the first place it is extra peritoneal. This should be in its favor. On the other hand the cervix must not be too edematous and the uterus should be so movable that the cervix would be pulled well down into the vagina, a condition which is usually present in the eighth month of pregnancy. The child should not be mature, i. e., too large, and the pelvis measurements must be ample. The operation then is reserved for those cases when the uterus must be emptied at the eighth month or before. This operation certainly has its place, and I believe has an advantage over the low cervical in certain cases.

Jenconi (Am. de Obstetrics XVI—1924) reviewed the literature on serious hemorrhages from ruptured blood vessels during pregnancy into the abdominal cavity and described the differential diagnosis. He also reports the following characteristics that aid in making the diagnosis:

1. Sudden tearing sensation.
2. Continued labor pains.
3. External tenderness of the uterus.
4. Distention of the abdomen, making abdominal palpation of fetal parts impossible.
5. Increase in anemia.

All of these symptoms were noticed in a case of apoplexi uteri observed by the author.

Dr. Miller recently reported a case (American Journal of Obstetrics & Gynecology, July, 1928) with all of the above symptoms, and after performing a Cesarean section found a ruptured dilated vein situated about one centimeter from the right uterine horn which was easily ligated and hemorrhage controlled. While such accidents are comparatively few, one wonders why this is so when he recalls the dilated mass of veins seen when doing the low Cesarean and which so often limits the extent of the dissection of the bladder.

Occasionally the placenta separates at its normal attachment. This condition is usually described as accidental hemorrhage, but the terms "ablatio" and "abruptio" placenta are now more often used. This condition is usually accompanied by pain which distinguishes it from placenta previa hemorrhage, which is a painless one. There seems to be much difference of opinion regarding the treatment of these cases. Much depends whether it be a home case or hospital case. Opening the abdomen offers the best chance for the baby, and in a primipara with a long stenosed cervix, the same holds true for both mother and baby. At home delivery must be made from below by the use of dilating bags and forceps or version. In multipara with easily dilated cervix, the conservative treatment by the use of bags should offer no difficulty. Another condition where the placenta separates at its normal attachment is one where the hemorrhage infiltrates the uterine wall separating the muscle fibres and distending the uterus to such an extent that its power of re-

traction and contraction is often destroyed is called apoplexi uteri. There is but one treatment for this condition if the patient is in the hospital, according to some writers, and that is immediate laparotomy and hysterectomy. The reason given is that owing to the damage done to the uterine musculature that organ will fail in its power to contract after the baby is removed, and the patient will die of hemorrhage. That this is not always true is proved by a case which occurred in my practice when the uterus was not removed and involution of that organ was normal. As many of the cases occur during labor in multipara and in the home, it is possible to handle them as one would an ablatio placenta. Fortunately they are rare and one may practice obstetrics a lifetime and never observe such a case.

Pregnancy outside of the uterus may continue through the entire nine months of pregnancy and even beyond, and the treatment of such is surgical. Due to the abnormal attachments of the placenta, under no circumstances should it be removed at the first operation. A definite line of treatment is given in text-books and medical literature which need not be reviewed here. Fortunately such cases are rare, but are much more frequent than the last pathological condition reported.

What is usually called the pre-eclamptic stage and the active eclampsia are frequently cared for surgically. We are not going to discuss now whether this is right or wrong. But as most of the cases occur in the home of the patient those who believe in the conservative treatment can find statistics enough to warrant such a procedure, regardless of the outcome.

Placenta accreta is a surgical condition. It is a truly adherent placenta, and the diagnosis between it and simply a retained placenta should meet with no difficulty. With placenta accreta there is no progress in the third stage of labor, i. e., there is no bleeding unless there had been forcible attempts to deliver the placenta by Crede methods or traction on the cord; and the cord does not advance as in normal separation. Under such conditions there should be no attempt to deliver the placenta. After several hours and no separation has taken place, a careful exploration may be made to make the diagnosis certain. To attempt to remove at this

examination has proved fatal to the majority of cases so treated, either by hemorrhage or sepsis.

When the diagnosis is once made of placenta accreta, abdominal hysterectomy must be done.

Inversion of the uterus sometimes requires a major operation. If recognized immediately, the fundus can usually be replaced manually. If this fails, then a laparotomy is necessary. If the inversion has been of long standing, a chronic condition, an anterior colpohysterotomy may be done if the uterus can be saved. When the uterus can not be saved, a vaginal hysterectomy offers the only good result.

Recently Tracy & First (*American Journal of Obstetrics & Gynecology*, July, 1928) made a review of 1,001 obstetric cases in which they reported ten patients who had Cesarean sections in other institutions for pelvic contraction. They were allowed in the next pregnancy to deliver by forceps of normal babies. The dictum, once a Cesarian always a Cesarean, does not always hold true. Whether we can accept this result as final in the treatment of repeated Cesarean sections is questionable. Much depends upon the necessity for the operation, the location of the incision, whether in the fundus or lower segment, the degree of contraction and the size and position of the fetus. As a general rule it seems hazardous to give a patient who has had a Cesarean a test of labor in the subsequent delivery.

An operation which is now being given thought abroad is the one reported by Dr. Louis Fortes of Paris (*Surgery, Gynecology & Obstetrics*, June, 1927). According to the author its field of usefulness is represented under four conditions:

1. When frank infection is present, the child is living and the condition of the pelvis is such that abdominal delivery is indicated.

2. In the presence of infection and of a dead child when delivery by the natural passage is not impossible, is at least fraught with danger.

3. When any maneuver through the birth canal might result in the rupture of the uterus. The operation is indicated in such a case, even though the child is dead. This applies expressly in the neglected cases with marked uterine contraction. In this type of case it is safer than craniotomy in a dead child or even embryotomy, as either of these procedures performed within a retracted uterus may well lead to rupture.

4. In the presence of pelvic indication for abdominal delivery with fetal putrefaction.

This operation is called temporary exteriorization of the uterus following a Cesarean section. Having the conditions present, the abdomen is opened, the gravid uterus is lifted out of the abdomen, the abdominal wall closed around it, the uterus is opened high in the fundus, child and placenta removed and wound closed and dressed extra abdominally. The stitches in the uterus often slough and the uterus itself becomes so infected that hysterectomy is necessary in its position outside of the abdomen. The uterus has been left in this position from fifteen to ninety days, depending upon its condition as to involution and sepsis before being placed in the abdominal cavity. When we remember that these cases were all seriously and dangerously infected and that the maternal mortality following the operation was low, the results are remarkable. There was one report of thirty-two cases in which the Portes operation had been performed with two maternal deaths—a mortality of 6.2%.

Pregnant women with advanced heart disease, unless delivery is to be seriously prolonged, may not be operated on as is so frequently advised. With proper care as their time approaches, rest in bed and sedatives during the first stage and then the labor terminated with forceps is undoubtedly the ideal treatment.

Forceps operations call for a skill not usual in the average young physician. When an obstetrician becomes a professor, about the first thing he does is to invent a new forceps, giving his name to the instrument. A curve here and there and a change perhaps in the handle make for it claims which are probably, if carefully analyzed, no better than the instrument of twenty-five or thirty years ago. It is not so much the forceps as it is getting used to a certain forcep. Familiarity with the instrument used goes a great way towards making delivery easy. Forceps operations are truly surgical ones. Great damage can be done by the misuse of such an instrument. And knowing this, one can imagine how much damage can be done by the average inexperienced physician who has entered practice without ever having applied the forceps in a hospital. The result must be appalling when we consider that most of the obstetrical work is carried on by young men who have really had no practical experience in the use of the instrument. The obstetrician with years

of training in the use of forceps undoubtedly applies the forceps more often than does the one who has not had that experience. In large hospitals the ward cases of most of the women deliver normally. The private cases are artificially delivered as a rule by forceps, and what is the result? The morbidity is greater than in the ward cases. This gives us something to think about. Conservative treatment or watchful waiting will lessen the frequency of the use of forceps, which so often by their use causes extensive lacerations and morbidity.

I have witnessed the transition in the practice of obstetrics through the antiseptis age and bedside watchful waiting, and when chloroform was administered freely by the husband of the patient or by the patient herself for hours at a time. When the obstetric forceps were left at home for fear the temptation would be great to use these prematurely and nature was told to do its best, it is surprising how well nature succeeded. Through the intervening period to the present I have witnessed many changes in the conduct of obstetric cases and while there has been great progress in the treatment of complications, I sometimes wonder how far we have arrived toward perfection in caring for the pregnant woman.

As a large part of obstetric practice is in the care of the young physician but recently graduated, the question naturally arises whether he is prepared to meet these emergencies. From experience I know that the average graduate from a hospital internship is not prepared to even properly apply forceps. He has witnessed the early interruption of a pregnancy by instruments or operation, for what, he does not know. He has been taught that there is such a thing as prophylactic forceps delivery. He has been told that there should be no second stage of labor. He has not been taught that nature is the best teacher, that watchful waiting is better often than instrumental interference, and the result is, the conditions of delivery are so magnified that he feels that he must deliver the patient instrumentally.

I am familiar with the talks by leading physicians at medical meetings, local and rural, that the Cesarean operation is simple, that prophylactic forceps must be used early, that a deep episiotomy even to the cervix, should be done

to hasten the delivery. Is it any wonder then, that nature in the treatment of confinement has lost its value? Let these men who are urging the shortening of labor by instrumental means talk these things at their special societies, but not before a mixed medical audience.

The prenatal clinics are doing much to teach the interns diagnosis, pelvimetry, abnormal conditions of the heart, kidneys, etc., and this prenatal care reduces maternal and fetal mortality and also lessens later conditions. Many of our large hospitals are doing good work, but the time given the intern at the maternity ward in actual deliveries is not sufficient to give him confidence or ability to meet the emergencies which he must meet in obstetric practice. He is told by teachers in obstetrics how simple it is to determine the age of the fetus by certain external measures and when the fetus has those measurements it has served its time in the uterus. A time is set for the delivery. A dilating bag is inserted through the cervix at 8:00 A. M. and at 4:00 P. M. the baby is born. Such skill belongs to the professor and not to the recent graduate. Meddlesome obstetrics are too frequent even in our best hospitals and give the wrong impression to the intern about to enter medicine. I am convinced that this is true because of statements made by recent graduates after about a year of practice; and because of the boastful number of major operations they have had in that length of time.

Radicalism in obstetric practice is to be condemned. I feel that there is no excuse, however expert the operator may be, for him to do version on over 900 obstetrical cases in about 1,200 deliveries. Such teaching has deleterious influence and is finding disciples to this treatment which to my thinking is nothing but criminal.

The young practitioner can read with profit a recent review of 1,001 obstetric cases by Tracey & First (*American Journal of Gynecology & Obstetrics*, July, 1928). In this review one finds the most astonishingly low mortality and morbidity and the most conservative treatment in emergency cases. A further study of this review cannot help but be a great aid, especially to those who are compelled to conduct confinement cases at the homes of patients. My advice is to the young graduate who intends to

do a general practice which includes obstetrics to take a special course in this branch of medicine for a few months in some representative maternity hospital. He will be more than repaid for the delay. There will come to him then ability and confidence which would only come after years of practice. At the time he is taking his course, if he will but contrast the treatment carried out in the ward with that practiced in the private cases I am sure he will agree with me that in the latter surgery plays a very important part—too much so, you will agree. I have only considered a few of those emergencies which may present in the practice of obstetrics, enough, however, to put the young physician on his guard and to have him understand that there is more to obstetrics than is demanded of the midwife, and careful prenatal care will diminish the necessity for forceps or other operations, thus reducing both mortality and morbidity.

TREATMENT OF CHRONIC SUPPURATIVE MAXILLARY SINUSITIS*

O. J. NOTHENBERG, M.D.

CHICAGO

There is no definite time limit which establishes the dividing line between an acute and subacute, or a subacute and chronic process of inflammation. The chronicity of an affection is determined not by its duration alone, but by pathology and symptoms as well. In the acute stage the symptoms are intensified. In the subacute stage the pathology is essentially the same as in the acute stage, but the symptoms are less severe; while in the chronic stage both symptoms and pathology differ from those of the two preceding stages.

Ordinarily, in a case of chronic suppurative sinusitis, there is a history of a previous acute attack, or perhaps several attacks. Occasionally, however, there is a case in which no such history is obtainable, where the onset and development of the condition has been slow and gradual, and a decided chronicity has been established before much attention has been given to the trouble.

I have seen and treated a few cases which

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

come in this category, where it was found that infection had entered through the root of a tooth and had given rise to a circumscribed inflammation in the mucosa of the antral floor, with a breaking down of the cells and formation of an ulcer, with a very scanty secretion of pus. The condition was confined to a very small area and the other parts of the antrum were not involved.

The pathological changes which take place in the antral mucosa in chronic suppuration are usually either a hyperplastic thickening of the membrane, or atrophy. These changes do not always involve the entire mucous lining of the antrum, but may only involve certain areas, more often the various recesses of the cavity. Other forms, like cysts of different kinds and polyps, occur; the latter, probably more frequently in the chronic catarrhal type of maxillary sinusitis.

With a better understanding of the symptoms of chronic sinus disease and improved means for its diagnosis there has been an increase in the incidence of these cases, so that now it is a quite common affection. But even at the present day, though there should be no excuse for it, it is not unusual to see cases of chronic sinus disease which have gone unrecognized for long periods of time and have been treated for everything except the real trouble. The probable reason for this, in many cases, is that the symptoms complained of are of such nature that they seem to have no relation to the nasal sinuses. For instance, broncho-pulmonary sepsis varying in degree from a slight cough all the way to a resemblance of pulmonary phthisis may be entirely due to chronic suppurative maxillary sinusitis, and will clear up when the sinus condition has been successfully treated.

There is a wide range of symptoms, both local and general, to which chronic sinus disease may give rise; but it is not the purpose of this paper to go into a detailed description of them. The mere mention of a few will suffice to elucidate the point. Very significant is a complaint of a chronic cold in the head. An ordinary coryza runs its course in a week to ten days, so that when local symptoms of a cold persist for months or even years, sometimes with alternating remissions and exacerbations, it is almost a practical certainty that the cause is a chronic infection in the paranasal sinuses.

Headache is a frequent, though not a constant, symptom. The types of headache vary, both as to location and severity. The patient may complain of a more or less constant dull headache, or one localized about the frontal, occipital, or other region of the head. It may be intermittent and neuralgic in character, simulating migraine, or just a sense of pressure, particularly about the eyes. The presence of pus in the nose is an important sign, and observation of the point of its appearance may aid in determining which particular sinus or group of sinuses is affected.

There are many conditions for which infection in the sinuses frequently is responsible, which give no definite clue to their etiology: Neuritis, myositis, arthritis, ear and eye affections, a general lowering of vitality and resistance, digestive derangement and impaired nutrition, loss of weight and anemia, general toxic condition due to absorption in cases with much impediment to drainage, lethargy, lack of concentration, loss of memory, and other mental symptoms. It may be the cause of the symptom complexes known as asthma, hayfever, and hyperesthetic rhinitis. Because of these and many other conditions directly or indirectly due to sinus infection, a careful inquiry into the condition of these cavities should be made routinely in examination of patients.

The diagnosis of chronic suppurative maxillary sinusitis is usually not difficult, although there are exceptions. In the exceptional cases an antroscopic examination or exploratory operation may be the only means by which a positive diagnosis can be made. This is true in certain cases of limited areas of inflammation or ulceration in the floor of the antrum, with a minimum of secretion, where transillumination, irrigation, and x-rays are negative, and no filling defects are noted. Only the presence of certain ill-defined subjective symptoms, which seem to originate or localize in or about the antrum, may give a clue to the true site of the affection. Where, as in most cases, an appreciable amount of pus is present in the antrum, x-ray, irrigation, and transillumination findings are usually positive, and only the possibility of the antrum being a receptacle for pus coming from suppurating frontal or anterior ethmoid cells must be excluded. But it is possible that this condition, if it ever occurs, has been largely over-

rated, and I believe that practically always an antrum which contains pus is a suppurating antrum. Occasionally there are cases in which a small amount of pus is present in the antrum, which is more or less inspissated and adheres tenaciously to the membrane, so that it is not readily removed with irrigation. I have had cases where transillumination and x-ray were positive, and irrigation at first negative; but upon repeating irrigation a few times, small amounts of stringy pus would be returned. Therefore, a single irrigation with negative result should not be taken as conclusive evidence that there is no pus in the antrum.

Many different methods have been employed in the treatment of chronic suppurative maxillary sinusitis; but, in cases of well established chronicity, anything short of surgical intervention offers very little prospect of a cure. Such modalities as irrigation, perfusion, suction. Dowling's treatment, heat, light, and ionization, may be very well adapted as accessory therapeutic measures; but without being combined with proper surgical interference, are rarely if ever sufficient completely to clear up these cases.

The anatomical peculiarities of the maxillary sinus, and the structure of its related nasal parts make it apparent that only through operative procedure can ample drainage and ventilation of this sinus be secured. And after all is said, free and unobstructed ventilation and drainage, are the two fundamental and all important requisites in the treatment of sinus disease. When these are established, any of the other methods of treatment may sometimes be helpful.

We then come to the question of what form of operative procedure holds the promise of the best results in these cases. In discussing this phase of the subject, the judgement based on one's personal experience is necessarily the deciding factor in preferring some one method to other methods. In detailing the procedure which is to follow, the writer merely wishes to state what in his experience has given the most satisfactory results.

In the first place there are very few cases of antrum disease that cannot be operated on just as successfully through the intra nasal route as through the canine fossa. By removing the greater part of the naso-antral wall in the lower

meatus, one can reach, with suitably curved curets, every part of the antral cavity and remove pathologic hyperplasias or other morbid contents. Through the naso-antral opening one can also determine by tactile sense, with the aid of a probe, the presence of hyperplastic tissue, as well as ascertain when the same has been removed. In the normal antrum the mucous membrane is thin and closely applied to the periosteum, with very little submucous tissue, which gives a sense of firmness, when probing, quite different from the soft and cushiony feel encountered when granulating or hyperplastic tissue is present.

The window in the naso-antral wall should be made as large as possible, within the confines of the lower meatus. If the opening is small it may close up before the suppuration has ceased and thus prevent a successful issue. This may also happen where the opening has been made quite large. The permanency of the naso-antral window is essential in order to achieve the desired result with the operation. To insure this it is necessary to sacrifice a portion of the lower turbinate. The old and classical method has been to resect the anterior portion of this bone. If no part of the lower turbinate is removed, because it may easily be traumatized during the operation, its subsequent swelling will close in on the antral window and form a support for granulating tissue to grow in and permanently occlude the opening. One should, of course, at all times deal with the lower turbinate as conservatively as possible, because its physiologic function is important; but it is still more important that the window in the naso-antral wall remain open until the suppurative process in the antrum has cleared up.

The resection of the anterior part of the lower turbinate is objectionable because it leaves the opening into the antrum directly back of the vestibule unprotected. In cold weather, especially, this may prove very uncomfortable to the patient, as the cold air strikes directly into the antrum. In order to obviate this I undertook, some years ago, the practice which I have since followed of resecting a semilunar portion of the lower turbinate from its middle part. This leaves the anterior end with its vertical attachment intact, and serves the purpose of

preventing closure of the naso-antral window most admirably. It also greatly facilitates irrigation, suction, or such treatment of the antrum as may be deemed necessary following the operation.

If there is no bone infection of the walls of the antrum, the procedure here outlined, when properly carried out, will result in a cure in most cases.

Unless it is necessary in order to control hemorrhage, it is better not to pack the nose after the operation. Some drops of an astringent mixture like adrenalin or ephedrine inhalent may be instilled in the nose every few hours, as that will help to keep the nasal passages patent, promoting healing by insuring freer drainage and aeration.

During the first week following the operation it is better not to use irrigation. Later, however, both irrigation and suction may be used to advantage. For irrigation a mild solution of lysole is very serviceable, and for removing all fluid from the sinus after irrigation, capillary suction through a curved canula is preferable to perfusion.

In cases where no curetment of the sinus has been done, the direct instillation into the cavity of antiseptic solutions may hasten the cure. For this purpose nitrate of silver in 1/2% solution is quite efficacious.

If the sinus has been cureted thoroughly no instillations of antiseptics are indicated, as a rule. However, if suppuration continues, some part of infected membrane may have been missed. This can be located by examination through the antroscope and can be removed with the curet, or a direct application of a strong solution of nitrate of silver to these areas may suffice. The length of time it requires for the complete cessation of discharge of pus following an operation is usually from one to six weeks. When no pus is brought out by irrigation, two weeks should be permitted to elapse, and then another irrigation should be made; when, if no pus is returned, the patient may be pronounced cured.

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DISCUSSION

Dr. H. C. Ballenger, Chicago: I think Dr. Nothenberg covered the field carefully. I do not agree with the statement that practically all suppurative antra require surgery. I find the majority of acute infections clear

up without it. In chronic infections the great majority require some surgical procedure. There are a few cases in which an intra-nasal operation is unsuccessful in which a radical operation should be done, but I believe the tendency at present is to greatly reduce radical surgery on the antrum. In acute cases I find I very seldom have to do even the antral window. Over a period of several weeks they do clear up, and if they get reinfected they can be cleared up again, and I prefer that to unnecessary surgery. Other than that I agree with everything he said.

Dr. Noah Schoolman, Chicago: The method suggested by the essayist is a very good one. I have myself found out that resecting the anterior portion of the inferior turbinate, sacrificing an important portion of the inferior turbinate, gives the patient some inconvenience by exposing the inferior meatus too much anteriorly. Infections of the antrum are rather common. Rhinitis of any severity is a sinusitis, and that is what makes it severe. The antrum participates in it. Most of the acute cases get well. When we get to the chronic cases we have to do more than depend upon nature to heal it, and resort to irrigation. Other cases, more serious require the antral window. But this does not end the story of antrum disease. It may be full of polyps, granulation tissue or pus that cannot be washed out and cannot be got at through the window in the lateral wall, and when this condition is present one should lay the antrum open and bring the diseased area within the line of vision. When such a condition is present you do not want to depend upon your probe, although it is very valuable. When the pathology has to be removed from the antrum I like to go through the anterior wall to see what I am doing. This is only for removal of pathology; the antral window has to be made just the same for permanent drainage. All these conditions have their own indications and methods of treatment.

Dr. Walter Stevenson, Quincy: A good many years ago when we first started doing window operations, we felt that it was necessary to resect the anterior third of the inferior turbinate in order to have sufficient space for manipulations on the lateral wall. This always proved unsatisfactory because of loss of turbinal tissue, exposure of the inferior end of the lacrimal duct and neuralgia caused by cold air currents entering the maxillary sinus. Following this procedure it was more satisfactory to sever the anterior two-thirds of the inferior turbinate from the lateral wall, and then pushing this resected portion into the roof of the nose, where it was secured by a cotton pack. After the operative procedure, the turbinate was reattached to its anterior end by a suture. Recently we have been using Struycken's septum speculum, which really is a modified Killian forceps whose blades are thin, but strong and closely approximated. The speculum is introduced beneath the inferior turbinate and then opened with force, which presses the turbinate up and out of the way, thus exposing the entire inferior meatus. Operative procedure is now carried out with ease, following which the turbinate is replaced at any angle or position desired.

Dr. O. J. Nothenberg, Chicago (closing): Dr. Ballenger stated that he cures most acute cases by irrigation. My paper did not deal with acute conditions. I presume that he does not agree with me that practically all chronic suppurative cases should be operated on. I have had cases that I treated with irrigation for six months at frequent intervals. It does lessen the pus and cut it down to a minimum, but it will come back again. In over twenty years experience, where I used irrigation I have never been able to say that I cured a well-established case of chronic suppurative maxillary sinusitis with irrigation, but after opening up and taking off the larger part of the nasa-antral wall and curetting the cavity where necessary, a cure has readily been obtained. There is sometimes need of an opening in the canine fossa, but if you have a large enough resection in the meatus with part of the lower turbinate resected, you can get at practically every part of the antral cavity unless there is almost complete obstruction, in which case it may not be possible. There are of course a small percentage of cases where it will not work, and I stated that, but in the great majority of cases I think the intranasal operation is sufficient and has been proven so, and I think should be tried before resorting to a more radical operation unless there is definite evidence of pathological conditions which one cannot possibly expect to clear up in any other way.

RADIOTHERAPY IN DERMATOLOGY*

R. H. STEVENS, M.D.

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Radiation therapy, as practiced at the present time, is very empirical, because, while the physicist, the biologist, the biochemist, the pathologist, and the clinician have made extensive contributions to our knowledge of electromagnetic waves, and their reactions with living matter, the science is still in its infancy, especially in the field of bio-chemistry, and much data we already have cannot yet be practically applied. Then, too, the nature of many skin diseases is not well understood so that any therapy for them must, of necessity for the present, be more or less empirical.

However, the object of this paper is to make a plea for a clearer understanding of the physical agents with which we deal in radiotherapy, as well as for closer cooperation between radiotherapist and dermatologist, for dermatological diagnosis is of supreme importance before undertaking radiotherapy.

First of all let us present a few facts and theories in regard to the skin that we may

better understand what may or does happen when electromagnetic waves of various frequencies invade its cellular structure.

It is difficult to say what organ or organs, of the body play the most important role in the well-being of the human being, and other animals. Certainly no other organ would seem to be more important than the skin.

It is a very complex one, inheriting many of the functions of the still more complex ectoderms of lower forms of animal life.

It is composed of two main layers—1. the epiderms; 2. the cutis, or true skin. The epiderms is being constantly renewed by the multiplication of cells in the deepest layer, the basal cell layer, which contains pigment cells, the daughter of which, called the prickle cells, are bound together by prickles somewhat like burdock burs. do not multiply normally and gradually differentiate with higher types. There are lymph spaces between them connecting with the lymph channels in the deeper true skin, and non-medulated nerve fibres part of the vegetative nervous system. As these prickle or pavement cells progress nearer the surface they evolve into the granular layer, so called because of the large keratohyalin granules seen in their protoplasm. Some special endocrine and other functions have been attributed to these granular cells. Apparently it is a very important layer of cells from a radiological point of view, as we shall see later. As the cells of this layer evolve to a still higher and more differentiated type, they lose their granular appearance, and become clear, containing an oily substance called eleidin, and as these evolve still further they lose their nuclei and become squamous or horn cells, which form a thin layer generally over the body, but a very thick one over the palms and soles. They contain keratin and a very waxy substance which waterproofs the surface, the only openings being those of the hair follicles and of the sweat glands. The cytoplasm of all these cells is of course made up of albumins of different molecular construction, lipoids, cholesterol, cystin minerals, salts and various ferments. It is said the skin contains more cholesterol than any other organ in the body. One of the sterols of this substance plays an important role in connection with ultra violet light as we shall point out later, in the growth and development of bone as related to rachitis.

*Read before the Section on Radiology, Illinois State Medical Society, May 23, 1929.

The cutis, or true skin, forms papillae which extend like fingers up into the epidermal cells. This is called the papillary layer. It contains connective tissue, elastic tissue, blood and lymph vessels, nerves of different types, vaso-dilator, vaso-constrictor, other non-medullated nerves which may play a part in metabolism, but concerning which we actually know but little, nerves for the erector muscles of the hair, nerves of sensation, nerves of special regions in the skin called secondary sexual organs, probably nerves that control the pigment system in the skin; temperature, etc., sebaceous glands, hair, and hair follicles, sweat glands, etc.

Below this, the deeper layer, containing also much collagenous and elastic tissue, deeper blood vessels, lymphatics, sebaceous and sweat glands, nerve trunks, fat, etc. There is more connective tissue in the skin than elsewhere in the body. It is now believed by some this tissue may have important secretory functions as well as the functions of forming a mere framework to support other structures. When one studies the activities of the fibroblasts in the cinematographic films of Carrel, and later of the more extensive and perfected ones of Canti, one certainly is impressed with the great possibilities and probabilities of a living active function of these beings whose secretion might influence other structures in the body, and whose function in life would be something more than merely making of themselves a supporting framework. When the connective tissue cell becomes sarcomatous it surely has a secretion inimical to the rest of the animal being. Why not a normal secretion that is of constitutional importance?

The elastic tissue has a susceptibility to light as we shall see.

The sweat and sebaceous glands certainly have important secretions. In 1916 E. Hoffmann in a paper¹ entitled "The Importance of Treatment by Rays in Dermatology, with Remarks about their Biological Effect" said,² "The assumptions seems obvious to me that radiation probably also stimulates the internal secretions of the epithelia of the epidermis and promotes the cure of tuberculosis through the formation or increase of protective materials. With the slight penetration of active rays assumed at the time of treatment, their effect can thus be best explained; and the

well-known favorable influence upon many infectious diseases, together with the fact that the skin in the exanthematic diseases is often the grave of parasites, seems to me to be properly adduced in favor of this idea."

Three years later he advanced the idea "skin of *esophylaxis*" by which he meant a protective function on the part of the skin organ for the whole body, directed against disease. These protective functions according to Hoffmann are exercised by all of the cells and cell combinations as well as by the epithelium—the blood vessels and the nerves, especially when the latter are stimulated to increased activity.

We do not see this idea of *esophylaxis* mentioned very often in dermatological literature, but it seems quite rational, when one studies the effect of electromagnetic waves upon the skin. For instance, Finsen, in the early nineties demonstrated clearly the chemical action of concentrated light upon normal and diseased epithelial cells, and while he thought much of the effect of light was due to its bactericidal properties, he recognized that the changed chemistry in the broken-down cells probably played a most important role in the healing. Just a few years ago Huldchinsky showed that ultra violet light baths protected babies from, and cured them of rachitis. Then came Steenboch and Windaus, who independently, with their associates, showed that this action was due to irradiated ergosterol, one of the sterols of cholesterol in the skin. Thus an important constitutional effect was derived from irradiation of the skin. However, in 1900 Finsen was already raying the whole body with carbon arc lights for anemia, tuberculosis, etc.

In this connection the author cannot refrain from severe criticism of a semi-scientific book written to instruct the layman, which has been having a large sale. It is "The Hunger Fighters," by Paul H. De Kruif, who also wrote "The Microbe Hunters." The author, in an effort to spread more glory on Huldchinsky, seems to think that it can be best accomplished by slandering Finsen. All honor to Huldchinsky for his work! And why not to Finsen, too? De Kruif, in his astonishing ignorance, or malign disregard for the truth, refers to Finsen as a "fanatic Dane named Finsen—now half-forgotten". This is also a slander on the scientific medical world, because Finsen's work on light stands today, and

1. Strahlentherapie Vol. vii, P. 1.

2. A. Memmesbeiner Strahlentherapie 29: 1, 28.

probably always will stand, with the medical profession, as classical. The whole radiotherapeutic superstructure including Huldshinsky's, Rollier's, Steenbock's, and many others, whose work De Kruif lauds, rests on the laboratory and clinical work of Finsen, on the chemical action on the skin of the ultra violet rays. He demonstrated the cure of lupus vulgaris, which afflicts so many in northern Europe, by means of the action of the longer ultra violet rays. He demonstrated their biological action in the skin and in the blood, and the general constitution; and his findings are quoted and sustained today by almost every author on the action of light on animal tissues. In recognition of his work he received the Nobel Prize.

But Finsen died a quarter of a century ago, a young man and much has been learned since. The institute he founded, and which has been under government support has grown to be one of the larger and more important clinical and research institutions in Europe. The treatment of lupus is carried out today practically the same as during Finsen's life, and the Finsen light treatment is acknowledged to be the most successful treatment known today for lupus vulgaris. His work and institution are monument enough for any man, but if more is needed two splendid monuments attest the people's love and respect for the honor and prestige which this "fanatic Dane, named Finsen—now half forgotten" brought to Denmark. To one who knew Finsen personally, worked under him, and followed the great advances made in radiotherapy since Finsen's pioneer work, the appellation given him by De Kruif is shocking. Never was there a more quiet, sincere, painstaking, self-sacrificing, unselfish, lovable man than Niels R. Finsen, who, though an invalid all his scientific life, accomplished so much in scientific research. But nothing De Kruif or anyone else can say, can take away or add to the halo of honor for scientific accomplishment and service to mankind that will always be Finsen's.

Radiation Energy.—Energy is carried by all electromagnetic waves, in small bundles, called quanta. The magnitude of the quanta increases in inverse ratio as the wave length diminishes, and the intensity of radiation depends upon the number of quanta delivered to the surface per second; that is, upon the frequency of the vibra-

tion. Upon the latter depends the wave length, and upon the wave length depends the penetration, though chemical change of the body radiated may also effect the penetration in the case of ultra violet rays, which latter chemically change the albumin and interfere with the penetration of these rays just as does hemoglobin. Of course such a change would not influence the x-rays or gamma rays.

For therapeutic purposes at the present time the following groups of electromagnetic waves are used:

1. Short Hertzian—around about one million Å.U.
2. Infra Red around about 10,000 Å.U.
3. Visible—6470 to 3900° Å.U.
4. Ultra Violet about 2500 to 3900 Å.U.
5. X-rays 8.2 to .06 Å.U.
6. Gamma Rays 0.01 Å.U.

To get the Ångstrom units, divide 12354 by the voltage.

Hertzian Waves: The shorter Hertzian waves are used in desiccation and electrocoagulation. They carry a large amount of heat, are very penetrating, so may distribute the heat over large or small areas, depending upon the mode of application.

Infra-Red Rays: The shorter infra-red rays (around 7000 to 8000 Å.U.) are not very penetrating, and hence the distribution of their intensity is not so great as in the Hertzian rays or longer infra reds. They are only effective in the superficial epithelial layers if the limit of tolerance of their application is reached. Here they produce a rise in temperature and pain long before their total energy is absorbed. Their quanta are not of an order to excite stimulation or molecules by acting upon their electrons, but are carried, transformed as thermic motion, to the molecule itself as a whole.

The infra-red rays contain the maximum of the output of the energy from artificial sources of light though the thermic effect reaches far into the visible spectrum, while in sunlight the maximum of thermic energy is in the visible rays. Hence if distribution of heat is desired into the deeper parts of the body it is better to use sunlight or next best artificial light (Finsen arc light) while if just heat and irritation to the superficial skin is desired other forms of heat are satisfactory.

Visible Light: So far it has not been demonstrated that the rays of visible light have any chemical action in the skin and other tissues. Finsen thought the blue and violet rays had some chemical action and were bactericidal, though to a lesser degree than the ultra violets. At the Finsen Institute in Copenhagen, Dr. Reyn. not long ago, stated he thought the visible rays had some value in the treatment of lupus vulgaris, by concentrated and diffuse arc light.

There is probably greater effectiveness in the therapy of tubercular conditions in the combination of the heat of the luminous spectrum and the chemical action of the longer ultra violets, such as is present both in the carbon arc light as used in the Finsen Institute in Copenhagen, and the sun light as used by Rollier in the Alps. The clinical results of both institutions seem to run quite parallel.

It is said that visible rays have no chemical action as do the ultra violet, but in at least two places in nature we find fluorescing pigments acting as sensibilizers, under the influence of visible rays alone. The one to provide eyesight through fluorescence by visible rays of the seepurple in the retina, and the other to synthesize the carbohydrates in plants through a similar action of luminous rays on chlorophyl.

It may be we shall yet find some metabolic agent which will prove to be an important transformer of energy in the animal economy that will react under the energy of certain wave lengths formed in the visible spectrum, and which would account for the clinical results mentioned above.

Kollath has found that the long wave visible light influences the oxygen phases of breathing (Warburg's haemin) in combination with unknown organic base, also the absorption of the albumins tyrosin and tryphophan begin at the border of the sun's ultra violet rays, (about 4000 Å.U.).

Ultra Violet Rays: In the ultra violet field the frequency of vibration is more rapid than in the field of visible rays and larger magnitudes of energy quanta can be distributed for absorption by the molecules of matter they strike and with which they resonate, and change the relationship of their electrons, thus rearranging their atoms, which means chemical action.

As a result there is a direct and an indirect

action. There is also an acute and a chronic reaction to light. The former might be considered as related to direct action, and the latter to indirect action. Specific and unspecific effects are also noted.

Ultra Violet Light Erythema: According to Reyn of the Finsen Institute, the erythema caused by the shorter wave ultra-violets of the mercury vapor lamp is much more severe and painful than that caused by the longer ultra-violet rays of the carbon arc light. Our experience confirms this observation. After a sufficient irradiation of unprotected skin with either type of light, or with sun light, there appears dermatitis of more or less severity, often with a formation of a blister. Several hours usually elapse before the full development of this reaction, thus there is a *latent period* just as is observed in x-ray therapy. The dermatitis was described by Finsen and by later observers as a chemical change due to the direct effect of the light energy on the molecules of the cells. As has been pointed out especially in the German literature the reaction may be a direct effect, or it may be an indirect effect from chemical decomposition and resorption of molecules of matter (protoplasm) with production of inflammation-producing material. Nathan and Sachs made an extract of irradiated skin, and upon injecting it into normal skin noted an inflammatory reaction similar to light dermatitis. Lewis Müller, Ebbecke, Krøgh, and others ascribed an experimental "diffusion erythema" from ultra violet light and other irritants to a vaso-dilating material formed by such stimulants. Hauser and Vahle came to the same conclusion. All the cells and fluids in the body, with their numerous chemical combinations and dissociations are so closely affiliated, the one with the other, that it is difficult to conceive of important chemical changes taking place in the one limited location without affecting neighboring tissues.

Of course, one can conceive of nature building protective walls so-to-speak, about the sick area, or possibly vaccinating neighboring sound tissue to prevent a general spread of the light disease.

In fact there is much evidence of the latter in the protection an irradiated area acquires against a future irradiation. When Finsen irradiated with a powerful carbon arc lamp the skin

of his arm through a series of lenses, some of which filtered out the ultra violet light, while some allowed the latter to go through, and then re-radiated the parts later on, he found the parts unprotected from the ultra-violet rays after a time were pigmented. These areas did not suffer nearly as much from a second irradiation as did the protected parts which had no pigment. Finsen considered this pigment reaction as the protection nature gives against further light action, and ascribed the same process of protection as developing in tanning, freckles, etc. This view has held until quite recently. Now carefully detailed biochemical research has shown several interesting things in connection with accommodation of the skin to light.

1. The sero-albumins after irradiation become more or less opaque to ultra-violet, and this is so with radiated sero-albumin within the tissues, or without, and placed as a filter. It also changed to a darker color after irradiation. In fact, as Holthusen recently pointed out at the Radiological Society of North America,—“The pigmentation of serum in the ultra-violet zone, which is shown in absorption curves, gained with the aid of a quartz spectograph promises great diagnostic importance. We already have the first statements about characteristic changes in the ultra-violet spectrum in certain diseases.” Carl With has shown that the negro's natural pigmentation does not give as much protection against ultra-violet light as pigment acquired by exposure. Pigmentless spots, such as vitiligo, may show protection against light. Numerous investigators have come to the conclusion that the cells may acquire an adaptation to the influence of ultra-violet rays. It is stated that the nuclei in the basal cell layer of the skin become more numerous after light exposure, and Keller found that the cell membrane becomes more resistant and less penetrable after light irradiation.

Closely related to light-accommodation is light-sensitization, and it has been suggested that the applications of the principles underlying the development of the former may be of service in combating the latter.

A sensitization of the skin and even the whole body may be brought about by injecting certain substances into the blood, for instance, eosin acridine, phenylacridine, chinin, etc. Certain food substances may sensitize to light, such

as buckwheat, which contains a fluorescing substance called fluorophile. This causes erythema, vesicles, and pustules or even light shock in light-haired animals, or animals which have spots of light hair, and is called “fago-pyrim.” Lachnauthus roots in the southern states cause similar and more serious sensitization. Some of the food sensitizations seen in humans probably have a direct relationship to light. Pellagra is perhaps in this class. Some individuals are born with an increased sensitivity to light. Such individuals are those suffering from hydroa vacciniforme, hydroa aestivale, and xeroderma pigmentosum. Hydro vacciniforme is a metabolic disorder in which the sensitizing agent has been found to be a fluorescent body known as porphyrin, called haematoporphyrin when found in the blood. It is also excreted in the urine. In normal individuals haematoporphyrin is completely decomposed in the body, and no residue is excreted in the bile or urine. Its site of origin is unknown.

Light exposure to individuals with haematoporphyrin may produce serious “light shock” or even death. It depends upon the intensity and length of exposure, and upon the amount of porphyrin in the blood. Most intense itching with erythema and edema are the main skin symptoms when such individuals are exposed to light.

In many of these cases the presence of porphyrin in the blood, bile, or urine cannot be demonstrated. In animal experiments, a long time after the porphyrin was given the animals remained sensibilized to light yet no porphyrin could be found in blood, bile, or urine. Accordingly in certain light-diseases while no porphyrin may be present, former presence may be the cause of a chronic sensibilization. Farmers have noticed that in animals suffering from fagopyrim, and kept in the barn, or only allowed out on cloudy days, were still sensitized to light for three or four weeks after eating buckwheat. Rabbits have been poisoned with sulfonal, and then when exposed to light they develop skin symptoms similar to hydroa, and haematoporphyrin was found in their blood. In light sensitive patients a five per cent chinin paste or 10 per cent solution of tannin or resorcin zinc oxide paste has been recommended to protect the sensitized skin against light. It is possible that light accommodation might be gradually brought

about. No sensitizing substance has been found in individuals suffering from xeroderma pigmentosa. These people develop scales, warts, keratoses and ulcers which are epitheliomatous, principally on the exposed portions of the body. The cause is unknown and treatment is not of much avail. It seems to be progressive after the first marked exposure to light.

Lupus erythematosus is sometimes related to light exposure. Inasmuch as this disease is supposed to be due to circulating toxins, frequently from tubercular infections, it is possible that some of the former may be light sensitizers.

Formerly lupus erythematosus was treated at the Finsen Institute by concentrated carbon arc light, but this has long since been given up, and much better results are secured with carbonic snow. Some of the cases will respond temporarily to mercury vapor ultra-violet light with dehaematization of the skin, and, if the focal infection can be found and removed a permanent cure may result.

Why are the face and hands redder than other parts of the body? It is due to chronic light effect, causing dilatation of vessels. These parts are also more pigmented than other parts. Many authors have claimed heat, cold, moist, windy weather and so forth are responsible, but Finsen by a series of careful observations showed it was due to light. He also showed that after "a severe reaction to light the skin for many months would react to the slightest mechanical irritation, with redness, confined to the radiated area. This is an important observation because it shows the skin does not react normally and it may serve to explain the development of certain skin diseases in areas most exposed to light, rosacea, acne, eczema, urticaria. We often see acne and eczema in the exposed triangle of the upper chest of women, also on the backs of the hands and face and ears we find dermatitis. Farmers and others who work in a stooped position have a red deeply furrowed quadrilateral patch in the back of the neck just adjoining the hair line. This is due to atrophy of connective tissue, and chronic dilatation of vessels from chronic light irritation. Old people suffer from senile elastic degeneration and colloidal millium on the face and hands. The face has a lifeless and yellow color, deep rigid furrows and wrinkles and mass-like deep thickening. This

also is a chronic light effect. A chronic scaling of the lips—actinic cheilitis—often followed by epithelioma is probably a light effect.

Erythema multiforme, often a seasonal disease, is probably sometimes related to light, according to Jesionek. Often it is only on the exposed parts. There may be a fluorescing toxin present.

Pityriasis streptogenes facies: A disease often seen as scaly patches particularly on the faces of children. It was usually classed with the seborrheic diseases, but Sabouraud found it was a streptococic infection. It often becomes eczematous. It is aggravated or developed by irritants, but light is supposed to be the main cause. It is found, according to Hausmann, more frequently in the spring and summer months. We have seen it here more often in the winter than in the summer. Many of these cases have been treated by light, and only aggravation follows, but not always. They usually clear up under a mild resorcin ointment.

Psoriasis is most frequently improved by light, but occasionally aggravated. Remember that irritations of the sound skin in psoriatic patients will often bring forth a new crop of lesions, and ultra-violet light might do this as well as any other irritant. The lesions usually respond to long-waved x-ray, or medium voltage x-ray, but soon acquire a resistance to these agents.

Falling hair, according to Hausmann, especially in blondes, is often worse from light, therefore we should proceed with caution in the treatment of these cases with light.

However, increased growth of hair (and nails) is generally noted in the summer. Nurses' arms at Finsen Institution have strong growth of lanugo hairs. Rollier and others noted increased growth of hair in the Alps.

What has been said thus far about ultra violet light relates more to unspecific effects, that is, there is no particular zone in the ultra violet light field, as far as it is known that is wholly and only responsible for the reactions mentioned, except the brief reference to the antirachitic properties of an unknown substance developed in radiated ergosterol, as discovered independently by Windaus and Hess and Steenbock and his associates. The ultra-violet rays are specific in the production of this substance—absorption

of the wave-lengths between 3000 and 2800 Å.U. only—accomplishing the purpose. Too prolonged an exposure even of these wave lengths causes failure as does exposure with other wave lengths.

Holthusen reports that Gurewitch (whose article we have not seen) "found that a tissue containing plenty of mitoses emits rays which in turn may produce mitoses on their part. . . . Reiter and Gabor, in Berlin, have not only confirmed the presence of mitogenetic rays, but have also discovered that the effect results from particular rays in the neighborhood of 3370 Å.U. If the vegetative compound of an onion be treated with a certain quantity of rays of this wave length, the cellular division becomes more lively at the spot where the ray strikes the root. Treated by these rays, tadpoles develop more rapidly. An overdose of the rays injures the cells. Even in the neighborhood of the effective wave length of about 3370 Å.U. the rays lose their effect entirely. The mitogenetic rays comprising a strictly limited zone show a distinct type of specific radial effect."

These discoveries are of great importance in radiotherapy in demonstrating that for two kinds of specific growth-effect, in which the ultra-violet rays are successful only certain specified wave lengths and accurate dosage will accomplish the desired results.

The ultra-violet rays are specific in this sense, namely, that they always transmit distinct amounts of energy which may be absorbed only where they can penetrate, and where there is a corresponding resonance. There are no scattering electrons or atoms to carry the energy or part of the energy of the primary beam to other atoms as in the case of x-ray. The resonance between the rays and matter depends upon the structure of the molecule and the size of the single quanta of energy coming to it. Matter and rays must be "in tune" to get chemical action. In fabrication there are beautiful illustrations of this principle. The ruby glass we use in our dark rooms owes its beautiful pure red tint to the merest trace of metallic gold, the particles of which are of such a size as to resonate with the wave lengths of about 7000 Å.U. (the red rays of light) and to damp out and destroy other frequencies.

These findings we have mentioned are no

doubt but the first of a large number of discoveries in the future which will serve to place radiotherapy on a much more scientific but at the same time more difficult and complicated basis. That will be so because the physician who practices this form of therapy in the future will of necessity, be required to be well-grounded in biophysics and biochemistry, and be able to have and use delicate scientific instruments of precision, which either do not now exist, or are only to be found in laboratories. In the meantime many of us, and the laymen, and the athletic clubs, and beauty parlors, and barbershops, install mercury vapor lamps, or cheaper toys, and go on applying an unknown amount of ultra-violet, or violet-colored light to everything that comes along, and occasionally we see a brilliant result, but the failures, the temporary, or perhaps irreparable injury to human beings are forgotten or not mentioned.

It is impossible to list diseases which might be improved by light. As you will notice sometimes a disease is improved by light, and sometimes it is aggravated. One should first of all make a diagnosis, if possible, and then determine whether the trouble is or is not "light disease". If it is, you will note if the exposed parts of the body are involved, if it is seasonal, appearing when the sun is strongest, if it is worse in the day time, and better at night. It may attack the covered portion of the body just as tubercles, syphilides, dermatophytides, etc., appear as concomitant eruptions in tuberculosis, syphilis, and dermatophytosis, etc., and might be mistaken for extension of the original disease. If there is any doubt small areas of skin should be treated first, and observed for extraordinary reactions.

Alopecia areata in most cases can be cured by water-cooled quartz light applied with pressure after shaving the hair all about the affected areas and treating well beyond the involved margins. Treatment can be repeated once in every two weeks. Usually three or four such treatments of three to five weeks are sufficient. In addition the scalp should be shampooed frequently with metaphen soap.

Port wine, birth-marks will often clear up under similar water-cooled ultra-violet light with pressure. At least five minutes treatment are necessary. Pityriasis rosea will clear up rapidly

under the air-cooled ultra-violet lamp. Eczemas may improve or be aggravated. In acne we much prefer the x-ray.

X-Ray.—In the field of x-ray there is a very different action from ultra-violet rays. While there is a much wider variation in wave-length in the x-rays than in the ultra-violet rays there is no specific action for any particular length of ray. They all carry enormous quanta of energy as compared with the ultra-violet, but they are of a size comparable to atoms, and they are consequently absorbed partly by atoms, producing heat and chemical change in the atom and molecule. The shorter rays are more penetrating than the longer, and hence distribute their energy where the longer rays cannot reach, but, as Holthusen stated last year, there is no difference in the action of the x-ray of 2 Å.U. and the ray of .06 Å.U. on the atoms they reach. The former, however, would distribute its energy in the superficial skin, only, because of the low penetration of its rays and the latter would distribute its energy not only in the skin but to a depth of ten to twenty centimeters in the tissues.

The amount of energy in the single quanta of x-ray is enormously greater than in the case of the ultra-violet, and is incapable of absorption in the molecule. The result is a transference of the larger portion of this energy to the photoelectrons (characteristic rays) and to the recoil electrons, causing a secondary corpuscular cathode radiation absorbed within two or three millimeters, and a scattering wave radiation of the same character as the primary. This latter is analogous to light scattering, and its extent depends upon the size of the field of incidence. The scattered radiation, of course, produces still more corpuscular radiation in the wider field. The destructive atomic action caused by x-rays has for some time past been considered as due to the corpuscular or electronic radiation which does not differ in character from that produced in recent years by Coolidge, except in intensity, the latter being many times greater. The greater the penetration of x-rays the greater their intensity in the deep parts because more rays reach those parts than in the case of softer rays. So in x-ray treatment of the skin we must determine the depth of the pathology we desire to affect, and apply the wave-length that will penetrate to the depth desired and carry a sufficient

intensity there to bring about the biochemical changes necessary, always bearing in mind the problems connected with the absorption, general and local, of the biochemical products caused by the radiation. Holthusen, in his address before the Radiological Society of North America last year, argued and emphasized several points in radiotherapy, some of which are comparatively new conceptions and which we should like to repeat here. Some of these conceptions are partly the result of experimental work of a number of investigators to which we have already referred in speaking of ultra-violet rays.

We mentioned the work of Haussman, Spiegel-Adolph and others who showed that the degree of increase of absorption is characteristic of the denaturing of albuminous bodies by ultra-violet action. Radium rays, heat, and roentgen rays produce similar changes in albumin though quantitatively much slighter. Holthusen says there is good reason for believing that the first attacks by the rays take place in the albumin molecules. This opinion would appear to be well supported by the similarity of changes noted by ultra-violet rays and heat. His studies on the action of x-rays on the eggs of the ascaris show that similar albuminous molecules are injured in the same way by heat and x-ray. "Injury through heat has an unusually high temperature coefficient of a degree which is characteristic for the caloric denaturalization of albumin." Holthusen thinks this denaturalization of albumins and probably of lipoids is a primary effect of the rays and denotes the loss of vitally important molecules thus impairing the life of the cell. This is shown in all parts of the cell, the nucleus, cytoplasm and cell-membrane.

The presence of these split protein materials no doubt exercise a local and general effect similar to that caused by the injection of foreign proteins—an intoxication more or less severe, having no doubt, a beneficial action in some diseases and a harmful effect in others. These effects are in all probability modified by the time distribution of the energy as well as by the total amount absorbed, and the liability of the cells involved. All of this complicates our x-ray therapy problem very much. It is very fortunate that for x-ray therapy the epidermis is constituted physiologically as it is. New cells are constantly being born and as they evolve into

higher types come rapidly to the surface to replace the old cast off squamous cells that have lived their normal short life. These cells may be badly injured by rays in our attempts to get a sufficient intensity deeper.

But the cells of the cutis are longer lived, and more difficult of replacement. They are the endothelia of blood vessels, which latter supply the nourishment to the skin, the collagenous and elascinous cells whose functions we do not yet well understand, the nerve and glandular cells and so forth. Severe injury to these tissues of the cutis must be avoided if possible, especially in areas over a centimeter or two in diameter.

In x-ray therapy we use, generally speaking, three different sets of wave lengths; namely, the long wave, from one to two Å units; the medium wave length, namely, from 0.12 to 0.24 Å. U. and the deep short wave x-ray, namely, from 0.1 to 0.06 Å.U.

Recently D'Auvillier has produced an x-ray tube with anticathodes of aluminum, magnesium, or silica, with a window of organic membrane which produce an intense characteristic radiation in air and in cellophane. The rays are absorbed in 1/10 millimeters of epidermis. It operates with 1500 volts and consequently gives a wave length of 8 Å.U.

We naturally think of the long waves as being valuable in skin diseases affecting the epidermis only, and we have used it with some success in the treatment of epidermophytosis. We find it useful too, in some cases of psoriasis and eczema. Dr. Eller of New York uses it for epithelioma of the eyelid, stating he can thus protect the eye, as the rays are too long waved to penetrate through the lid, and the epithelioma is destroyed completely by the rays.

They are largely absorbed in the granular layer of the skin but set up secondary changes in the cutis which may account for some of the good results in deep seated, benign and malignant diseases of the skin. Bucky, the pioneer in this therapy, makes a much wider and more extensive use of these rays even claiming benefit in constitutional diseases involving seriously the blood. He treats fairly deep seated skin cancers by this method and shows photos representing cures. We have had no experience with the rays except as mentioned.

They probably do not produce the serious

atrophy, telangiectasis, and so forth seen with the harder rays, if used in voltages below 10,000, unless, of course, one gives serious overdosage when serious changes may result.

Many skin affections are alleviated or cured by the medium length wave, i.e., up to 100,000 volts. Eczemas, acnes, rosaceas, psoriasis, lichen planus, ring worms and so forth, all respond, more or less satisfactorily, but one must try to recognize the pathology in these diseases and seek out the etiology, before applying the x-ray therapy. Eczemas are now regarded only as symptoms of any of hundreds of different inflammation-producing irritants of endogenous or exogenous character. If the etiology is not removed the ray may not only do no good but do actual harm.

It is safer to treat large areas with filters of aluminum and the dose should be carefully measured and repeated as indicated, keeping well within safe limits of cumulative full dose effects.

In warts, corns and small malignancies, good results may be had by giving what would be several erythema doses for large areas; areas 1 to 1½ centimeter in diameter only should be exposed to these super-doses.

In malignancies, sections should be taken and graded if possible before the treatment is given. In grades three and four (Broder) squamous cell growths, the drainage glands should certainly be thoroughly treated. Melanomas should be treated by radiation, although they are very resistant and may not respond. The radiation must be very intensive and cover a considerable territory. Desiccation or electrocoagulation in these cases should follow.

For a few years we have followed more or less the French school technic as well as Pfahler's in the treatment of these cases. If we use radium we estimate the dose and using 2 mg. tubes in platinum filters well distributed on a wax sawdust moulage, and keep up the application for a week or ten days as we determine. If we use x-ray we give a full dose in two or three days and then keep it saturated for two or three weeks. If the drainage glands are treated, heavy filtration and short wave lengths are used in the same way daily for three weeks. We presume it would be better still to treat these cases with x-ray twice a day, but that is hardly practicable

for one who does both private and hospital work.

We use radium, or Finsen, or water-cooled ultra-violet light in naevi. We have not time to go into details. The radium rays do seem to be selective in these cases but that is, no doubt, due to the beta radiation, which is generally used though pure gamma rays are sometimes in deep seated cases, used with success.

Keloids may be treated successfully by either gamma or x radiation well filtered.

Many other skin diseases might be mentioned as amenable to x and gamma radiation, but that would take too long.

Just remember to accommodate the wave length to the depth of the primary pathology. Find and eliminate, if possible, the causes. If you are not a dermatologist you would better cooperate with one. If you are a dermatologist and not a radiolotherapist hunt up a good radiologist who knows something of therapy and cooperate. You cannot afford to be a charlatan in any sense of the word. Remember that the primary action of the ray is not the only action. The secondary "pharmacologically effective products of ray degeneration" must be reckoned with locally and generally. Remember that the radiologist is in constant danger of suit for malpractice by unscrupulous holdup people, who may never have been in jail but—. There are many changes in skin disease, as pointed out recently by George MacKee, that occur normally and may be attributed to radiation.

They may be spontaneous reactions, toxic rashes, dermatophides, tuberculides, and so forth, which often appear in distant parts in patients with epidermophytosis, tuberculosis and so forth, or irritations from topical remedies, like iodine, chrysarobin, resorcin and so forth. A second disease may develop spontaneously in a patient who already has one skin disease and the radiation get the credit for it. Malingerers may cleverly imitate x-ray reaction. Some few diseases are characterized by atrophy and telangiectasis which may resemble late x-ray effects.

Radiotherapy in dermatology has only been practiced about thirty years. Its scientific development in that time includes so much scientific research in physics, biology, chemistry, and pathology that it has meant an immense amount of study and experience and expense to try to

keep pace with it, which I fear our patients do not realize, and can never pay for except by their sympathy, good will and cooperation, assisting us with their money in providing funds for research by unselfish scientists and clinicians.

Our advice to young men is to keep out of this work if they are more interested in the commercial side of it. It is too dangerous and complicated for the charlatan. But as Mme. Curie said, "humanity also needs dreamers, for whom the unselfish following of a purpose is so imperative that it becomes impossible for them to devote much attention to their own material profit." To which we say Amen!

A CLOSED ASEPTIC AND QUICK METHOD OF GASTROINTESTINAL ANASTOMOSIS*

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Operative procedures directed for the relief of diseases of the stomach and the intestine have been an inspiration to the surgeon and investigator for many years. At least two hundred and fifty methods have been devised, have had favor for a time, and been abruptly discarded. Silvestri, in 1862, introduced an elastic ligature to perform an intestinal anastomosis. This was perfected by McGraw in 1891. Others since have introduced various contrivances: Senn's bone rings, Harrington used segmented aluminum rings, Murphy used buttons, Robson suggested decalcified bone bobbin, O'Hara used a special forcep which he suggested for end-end and lateral anastomosis,

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and Halsted used inflatable rubber cylinders. Recently Perret of Berne, Switzerland, and Rankin of the Mayo Clinic have devised instruments for intestinal anastomosis. One of us (Partipilo) in a preliminary report with same title described the use of the Partipilo Clamp for gastro-intestinal anastomosis.

Many other methods have been suggested which are too numerous to mention. It was early proven that it was not advisable to introduce a foreign body within the bowel to sustain an anastomosis. The danger of mechanical obstruction, although rare, occurs frequently enough to condemn them. In the hands of an able surgeon, methods, which employ only the use of a suture of some type or other, are acceptable, even though such procedure may occupy a considerable amount of time. However, it must be admitted that the open or the suture method of anastomosis is not the "ideal." Dr. Partipilo in his preliminary report states that: "the open method of anastomosis is attended with a certain amount of post-operative complication and with fatalities that are directly due to spilling of contents or contamination from the opened bowel. Perfect asepsis in an operation is of utmost importance for the welfare of the patient, and it is the ideal for which the surgical profession has been striving. It cannot be obtained with ordinary precautions that prevent infection due to extraneous causes. An operation must be carried on aseptically to its completion; this cannot be done with an opened stomach or intestine."

The gastro-intestinal tract being a series of hollow viscera make certain provisions mandatory, which is not the case in surgery of the solid organs of the abdomen. It follows, therefore, that the removal of segments from the stomach or the intestine and the apposition of the severed edges in a secure fashion must satisfy against the following: 1. Escape of the contents of the stomach or the bowel; 2. Avoid obstruction of the lumen; 3. Prevent hemorrhage from the severed edges; and 4. Provide a secure apposition without leakage. As will be demonstrated in the film the use of Partipilo Clamp makes secure all of these provisions, offers the means for an ideal aseptic anastomosis, and in addition it reduces the operating time to a minimum.

The clamp can be used whenever an anastomosis of any type is indicated. It was especially devised to resect ulcers of the stomach and the duodenum for which no other instrument has been devised. The films will show the method of removing an ulcer of the stomach, lateral anastomosis, end-end anastomosis, gastro-enterostomy, and an entero-enterostomy. The various features of the clamp will also be demonstrated in the film.

The first scene in the film shows the original clamp which was modified by Dr. Partipilo. It was found during experimental work that the original clamp did not have strong enough blades to crush the edges to our satisfaction. The tissues also had a tendency to slip out of the blades, thereby defeating the purpose of the instrument. The modified instrument has angiotryptic blades which hold the edges securely. It has been made on a Payr Clamp basis so that it will insure adequate crushing of the edges. The handles have a lateral and downward angulation to permit freedom of movement in handling the instrument. The blades are $3\frac{1}{2}$ inches long, being $1\frac{1}{2}$ inches longer than the original clamp. When brought together the clamps are locked by a set screw.

The first operation demonstrated is a resection of an ulcer on the greater curvature of the stomach. The gastrocolic omentum is removed and stitches are taken to control the right and left gastro epiploic arteries. The latter stitches include part of the stomach wall and they define the line of resection. The Partipilo Clamps are applied so that the ulcer is removed with a V-shaped portion of the stomach. Above these, ordinary forceps are applied to control the contents of the part to be removed. The stomach is now resected with knife, and these are very carefully discarded. The cut surface of the stomach within the clamps are cauterized with phenol and alcohol. You will notice that there is no hemorrhage and the tissues are held securely within the blades. The clamps are placed together and locked. The anterior surface is sutured first, beginning at the tip of the clamp with a Lembert stitch and continued with Cushing stitches. The latter are placed parallel with the clamp. The needle does not penetrate through all the layers of the stomach wall, but just down to the mucous membrane. The suture

ends, also as a Lembert stitch, at the opposite side from which it was started. The clamp is turned over so that the posterior surface of the stomach is exposed. The same type of suture is inserted, beginning on the opposite side to where the anterior suture ended. The clamp is now ready to be removed. The assistant will hold the short end of the anterior and the needle end of the posterior sutures, whereas the operator holds the short end of the posterior and the needle end of the anterior sutures. As the operator releases the clamps and pulls it out, the assistant pulls the sutures in his hand. The edges are automatically inverted with no spilling of the contents and a perfect apposition. A second row of suture is inserted, using the original needles that were used for the first row. It is noticed that the line of suture is in the transverse diameter of the stomach, thereby increasing the length of this diameter. The gastro-colic omentum is now approximated to the greater curvature of the stomach, and the operation is completed. The time consumed for this operation should not exceed 15 minutes.

The second operation is a lateral anastomosis. The first step shows the ligation of the central and the collateral arteries, and the resection of the mesentery. The diseased bowel is cut off under aseptic conditions and the ends are inverted with the Kerr-Parker method. The two loops of severed bowel are brought together isoperistaltically. A Partipilo Clamp is applied on one of these loops, the blades taking hold of an excess amount which will later be shaved off and thus produce an opening, and the tip of the clamp pointing towards the blind end of the bowel. The other clamp is applied in a similar manner with its tip pointing away from the blind end of the other segment of bowel. The clamps are now brought together and locked. The same suture is carried out as in resecting the ulcer of the stomach. The film demonstrates again this suture, but it is superfluous to repeat it. The other features and the completion of the operation are also clearly demonstrated.

The third operation is an end-end anastomosis. A very important procedure in this operation is to free the mesentery from the bowel wall for a short distance so that it will not be inverted in the anastomosis. The clamps are ap-

plied $\frac{1}{8}$ inch above the line of resection and the diseased bowel is shaved off under aseptic conditions and discarded. The clamps are placed together and locked and sutured with same type of stitch. The film also shows the various steps of the operation.

The next shows the method of applying the Partipilo clamps for posterior gastro-enterostomy. The stomach is brought out through an opening of the transverse meso-colon. Allis forceps are applied on the greater and lesser curvatures of the posterior stomach wall. One of the clamps is applied on the stomach held by the Allis forceps, so that its tip points to the lesser curvature. The first loop of jejunum is found and the other clamp is applied so that its tip points to the proximal end of the bowel. The tissues protruding above the blades are shaved off and surface cauterized. The clamps are then locked and sutured in the same manner as described above. The last operation is an entero-enterostomy. The loops of bowel to be anastomosed are approximated side by side, and the clamps are applied, the protruding tissue is shaved and sutured as before mentioned.

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DISCUSSION

Dr. Bernard B. Heymann, Peoria: I am familiar with Dr. Partipilo's work at the Laboratory of Surgical Technique of Chicago. This piece of research work shows the real value of doing dog surgery. For the older surgeon dog surgery offers opportunities to improve his surgical technique and expedite his operative work. For the younger surgeon who is desirous to go into the surgical specialty, dog surgery offers him an excellent opportunity to develop good surgical technique.

I wish to ask Dr. Partipilo several questions with reference to the new devised Partipilo clamp which he has just described. I notice that in the center of the blades there is a raised piece of steel running through the entire length of the clamp.

First: I wonder to what extent the crushing effect of this clamp will have upon the bowel, with special reference to the sloughing of the mucous membrane; will sloughing be greater with the use of this clamp?

Second: With this instrument, and use of the Lembert stitch as described by Dr. Partipilo, is hemostasis properly controlled?

I can readily see the value of using this instrument in

*I am indebted to Sharp and Smith for their cooperation and aid in designing this instrument.

expediting various operations on the bowels, such as gastro-enterostomy, end to end anastomosis, and especially where lateral anastomosis must be done, since time is an element of factor in these operations, and this instrument seems to offer this advantage.

Dr. W. J. Pickett, Chicago: There is no question but that an appliance of this sort facilitates and makes a much more easy anastomosis. The film took only twelve minutes' time to show, so you can see how quickly the operation can be done. It is very true that the preparation was made in advance.

There is criticism of any type of instrument of this sort. One is that a great deal of tissue may be inverted into the lumen and obstruction produced. That must be avoided. The more tissue inverted, the more will have to slough. If there is secondary edema, there may be obstruction. There is no doubt but that a suture anastomosis can be done a little more accurately than a mechanical anastomosis, but at the same time a mechanical anastomosis produces a sort of anastomosis in which it is almost impossible for the surgeon to err in such a fashion that there will be leakage after the anastomosis has been completed. I think surgery of the abdomen has not advanced in standardized technic a great deal in the last ten years. There have been a few minor variations produced which have been of great value, but there has hardly been anything beyond that. I think an instrument of this type demonstrates that something can be done which is a real step forward in the standardization of a good deal of the technic employed today.

Dr. J. H. Bacon, Peoria: To improve results in any type of surgery we must learn more of the pathology and physiology that is involved. Any improvement in the instrument used must improve our technic, and our results of course will follow. It seems to me that this instrument as shown is too heavy and destroys too much tissue. If you are doing an anastomosis on a baby's bowel, you would have no tissue left after the application of this instrument. We must not judge the results of what an instrument will do, however, from a moving picture, because at best often our judgment will be fallacious. Much takes place that we do not see. To see just what the results of the use of the instrument may be, one must see the anastomosis done standing by the surgeon. However, this instrument does seem to have some advantage over some of those used in the past. I would like to see it used and follow up the results before attempting to use it myself.

Dr. J. R. Harger, of Chicago: I would like to ask two questions; first, the danger of postoperative hemorrhage with this instrument, and second, what the clinical results are following gastro-enterostomy or resection.

Dr. A. V. Partipilo, Chicago (closing the discussion): In answer to Dr. Heymann's question, the purpose of the angiotriple blades is to get a sufficient crushing of the tissues so that the septum within the blade will slough within twenty-four to forty-eight hours. During our experimental work, which we are not reporting at this time it was found that angiotriple blades were

necessary to cause sloughing of the septum within forty-eight hours.

As to hemostasis, that is taken care of by the crushing effect of the blade and by the tightening of the edges by the first row of sutures. We have had no hemorrhage during our experimental work. Perret, of Switzerland, has used his instrument in a number of cases with excellent results. He has had no hemorrhage in these cases. Rankin, of the Mayo Clinic, also reports experimental work on the use of his clamp, also in a number of cases in the human body without hemorrhage. The danger of hemorrhage is always present, regardless of the method used. For the open or the closed method of anastomosis pre-operative precautions must be taken to lessen this danger.

In answer to Dr. Pickett's question regarding the invagination of too much tissue, that again is answered by the fact that the septum formed sloughs within forty-eight hours. The same thing happens to the septum after the open methods of anastomosis. The septum must slough, otherwise there is danger of obstruction; this is absolutely eliminated with the use of the clamp.

I appreciate the statement of Dr. Bacon that we must know more of the pathology and the physiology. As I have stated before, we are not ready to report this phase of the work. The principle of the clamp has had, however, sufficient experimental work and actual demonstration on the human body as reported by Rankin and Perret. It is certainly true that we must wait until our experimental results are reported before I will ask you to accept the instrument.

Dr. Harger's discussion about the danger of post-operative hemorrhage I have already answered.

APPENDICITIS IN CHILDREN UNDER FIFTEEN YEARS OF AGE*

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CHICAGO

The term appendicitis is used to designate an inflammatory condition in the right lower quadrant of the abdomen with the appendix as the source of infection.

During fetal life the cecum and appendix gradually descend so that they occupy nearly the same position as found in the adult. However it is a common belief and is an accepted opinion that the appendix lies higher in the child than in the adult. Variations in the position of the appendix are considerable, but its insertion at the base of the cecum varies but little from a point just above McBurney's point.

The appendix of a child is relatively larger

*Read before Section on Medicine, Illinois State Medical Society, Peoria, May 23, 1929.

both in length and diameter than in the adult. In fact, sometimes it nearly approximates that of the adult. Due to the funnel shaped mouth better drainage is obtained than in the adult. Roentgen-ray studies by virtue of the use of bismuth have shown the appendix to be entirely patulous. The abundance of lymphoid tissue in the appendix of a child seems to account for the rapid progress of the disease at that age.

It is becoming more evident that appendicitis in young children is not as rare as formerly believed. Christopher¹ has given us a very excellent and complete literature review of the subject up to 1926. We cannot say anything definite as to the causation of appendicitis, but I do not believe that any of us can deny the relationship of appendicitis to infections of the naso-pharynx and acute exanthemas. It is not uncommon to find a child developing appendicitis following tonsillitis or measles. The infection is undoubtedly transmitted by the digestive tract (continuity), and the blood stream (hematogenous). Certain writers in the past have held that a large percentage of cases were caused by the oxyuris-vermicularis; however, I have not found this as a cause in a single case. Foreign bodies play a negligible role as a causative factor. Intestinal infections are held by some to be responsible for many cases. Indiscretions in eating and overeating are overrated as a cause, because the intestinal tract compensates as a rule.

Age. The disease is uncommon during the first few months of life. however, I have read of a few cases of prenatal appendicitis. In one of these cases the postmortem showed the abdomen filled with pus. The appendix was injected and showed a small perforation; the baby lived only twenty-four hours.

In my study of two hundred cases of appendicitis occurring under fifteen years of age I have made three groups, particularly to ascertain if there was any certain age limits in which appendicitis was more common. In each group I also noted the number of cases occurring in males and females. (Table 1).

My first group includes all cases from birth to four years of age. Eight cases or 4% of the total were in this group. Five cases occurred in males and three in females. The second group includes all cases between five and ten years. There were

115 cases or 57.5% in this group. The sex incidence were as follows: Males, 48 or 42% and females 67 or 58.5%. The third group include those cases between eleven and fourteen years of age. Seventy-seven cases, or 38.2% fell in this group and of the 77 cases, 36 or 47% were in males and 41 or 53% were in females.

I do not feel that the above chart gives us much added information except that a larger percentage of cases occurred between the ages of five and ten years and a larger per cent occurred in females.

Constipation is usually well marked and at times is most obstinate. In my report it was present in 110 cases out of two hundred or 55%. I feel that my figures are a little below the percentage usually quoted.

Three cases or 1.5% gave a history of diarrhea.

Twenty-three cases or 11.5% gave a history of previous sore throat. This bears out the statement I made that many cases of appendicitis are due to infections of the naso-pharynx.

Vomiting is held by some to be a most constant symptom. It usually precedes pain and sometimes ushers in the disease. (Table 2.) The chart shows that vomiting was absent in a large percentage of cases.

Pain while a cardinal symptom is not always reliable. Many times through fear the child will deny pain or its location. The pain in the beginning is almost always generalized about the umbilicus but within twenty-four hours it localizes in the right lower quadrant.

In children especially I feel that the most diagnostic finding is to elicit an area of localized tenderness. This area of tenderness will be better obtained by the careful examiner. It is not at all uncommon to find a normal temperature with all the findings of acute appendicitis present. In my work I studied the temperature by dividing the total 200 cases into those which were ruptured and those which were not ruptured. Thirty-nine cases or 19% were ruptured and the average temperature before operation was 100.8, I think this temperature report is lower than we would expect. Of the 161 cases which were not ruptured the average temperature was 99.8. This should impress on us the fact that even in a ruptured appendix we should not expect to find a high temperature.

A white blood count before making a diagnosis is of value. In my report I have nothing definite to say about leucocytosis because the laboratory record is not complete. While white blood counts ranging from 12,000 to 20,000 are common, it is not unusual to find a normal white count with all the findings of a severe appendicitis.

A great deal of harm is done in many cases by the administration of cathartics by the parents before a doctor is called. Ten cases or 5% received a cathartic preoperative, and of those cases the average period of hospitalization was sixteen days. The total mortality in my report was 14 cases out of 200 or 7%. Of the total of fourteen deaths two of the patients that died had received a cathartic preoperative. A cleansing enema preoperative I do not think is harmful, however. my report shows that of the fourteen deaths four occurred in patients who had received an enema preoperative.

A careful physical examination is very important. A proper diagnosis and perhaps the life of the child depends on the tact and care of the examining surgeon. In dealing with young children especially, the doctor must in a way, lay aside the dignity of his profession and become interested in child life.

Before entering the sick room find out the child's name. After visiting with the child for some time regarding their various playthings, ask him where his "stomach-ache" is and many times they will indicate with their finger where the pain is. Before examining have your hands warm. The child should lie flat on his back with his head on a pillow and the knees slightly flexed. The hands are placed on the abdomen in such a way that the tips of the fingers do not pout into the belly. The abdomen is best examined during inspiration. Always palpate first where you are quite sure there is no tenderness, by doing this the child will become less apprehensive and may in fact cooperate with you in locating an area of tenderness.

On palpating in the right lower quadrant if definite tenderness is felt it is the most conclusive evidence we have of appendicitis. Rigidity of the right rectus muscles is not always present in the beginning, but with peritoneal irritation it always appears.

Rectal examination should never be omitted

in doubtful cases, because a mass may be felt and a retro-cecal or pelvic appendicitis determined. It is quite common in children to mistake appendicitis for something else, while in adults other things are often mistaken for appendicitis. The differential diagnosis is important and sometimes difficult. A great many cases of appendicitis in children are diagnosed pneumonia, probably because of the frequency of pneumonia in children. A child with pneumonia appears much sicker, the breathing is labored and abdominal in type. The temperature is higher, the face flushed. Pain in the right side of the abdomen is sometimes present when the pneumonia involves the base of the right lung and there is a diaphragmatic pleurisy. Pyelitis must be ruled out in every case especially if the right kidney is involved. In pyelitis the temperature is very high and remittant in type. The area of tenderness is usually higher up than that found in appendicitis. The presence of pus is the diagnostic factor. Ileo-colitis should not be hard to rule out. The localized tenderness of appendicitis in the right side is lacking and there is usually a frequency of stools. The pain in intestinal obstruction is more severe and there are no bowel movements. Marked tympanites is present and vomiting is persistent. Acute appendicitis is not easily confused with the onset of acute infectious diseases because in the latter there is usually a history of exposure and abdominal pain is absent.

The younger the child the more difficult the diagnosis. The onset is insidious but there is a great danger to early formation of gangrene due to the excessive amount of lymphoid tissue in the appendix and the relatively small size of the omentum.

Early operation is very important. In my report I found that the mortality was cut more than 50% in those cases which were operated on within the first twenty-four hours, and the period of hospitalization was markedly reduced. Of the 200 cases only 65 were operated on within the first twenty-four hours. There were four deaths in this group and the period of hospitalization was thirteen days. The remaining 135 cases were operated on later than twenty-four hours from the onset. In this group there were ten deaths and the average period of hospitalization was seventeen days.

In the post operative care the child should be kept quiet, preferable in Fowler's position. Proctoclysis of glucose and sodium bicarbonate should be carried out for twenty-four hours. If the child is under five years of age they may not tolerate the proctoclysis well, in this case they should receive hypodermoclysis.

CONCLUSIONS

I feel the important points we should remember in the diagnosis of appendicitis are:

1. The presence of tenderness in the right lower quadrant.
2. Rigidity of the muscles in the right lower quadrant.
3. The presence of leucocytosis.
4. The presence of persistent vomiting mitigates against the diagnosis of appendicitis.
5. A consistent high temperature should make us question the diagnosis of uncomplicated appendicitis.
6. The importance of early operation cannot be emphasized too much.

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Table 1.

Age group	Male	Female	Total	Percent of total
0—4	5	3	8	4 %
5—10	48	67	115	57.5%
11—14	36	41	77	38.2%
Total	89	111	200	100 %

Table 2.

Incidence of vomiting in children 0—14 years with appendicitis.

Number of cases		Percent
59	No vomiting	29.5%
104	Once	52 %
22	Twice	11 %
9	Three	4.5%
5	Four	2.5%
1	Five	.5%

DISCUSSION

Dr. R. O. Stites, Industry: I would like to add something about cathartics. We had a surgeon prepare an article on appendicitis and it was published in a local newspaper. The substance of the article was that the most tragical thing to do was to give a dose of castor oil in acute abdominal pain. It went through the lay publication as news of the medical society as information for the benefit of the public health and was approved by the committee appointed for such news articles by a member of our local medical society, and I think it did a lot of good in preventing a cathartic in acute appendicitis.

Dr. Gerald Cline, Bloomington: I wish to compliment Dr. Cummings on this very interesting paper on appendicitis in children under fifteen years of age.

Again it brings up another subject for question, that we should not be too anxious to go home and make a diagnosis of appendicitis in children. We know it does happen in the younger as well as the older child. Yet there are so many other things to be considered in making a differential diagnosis that it involves a lot of study.

I was greatly interested in Dr. Cummings' story on cathartics. It seems to me if we can educate our parents, and perhaps as well ourselves, on this factor of giving cathartics to our children when they are sick, particularly castor oil or calomel, in large doses, in a great many instances, we are going to reduce the incidence of appendicitis in children.

The anatomy of the appendix in the child does lead us to believe it does happen and that it can be prevalent. The lymphoid tissue in the appendix again brings up the subject—absorption from other infectious diseases that might be an early cause.

His two points on vomiting and low temperature I think are excellent. It has been my experience that vomiting does not happen nearly as often as we are led to believe.

I was interested in the study he has made in this number of cases. I think he is to be complimented on the study of 200 cases. That is quite a number of cases of appendicitis in children under fifteen years of age.

Low temperature is certainly a point worth while keeping in mind.

In making a differential diagnosis I just wish to emphasize again some of the points he has brought up, particularly on pyelitis. Certainly every child should have a specimen of urine examined at least before any thought of an operation. My thought on the chest condition, so often rather than appendicitis being confused with pneumonia, pneumonia is confused with appendicitis.

Another point he did not mention which I think we should keep in mind is what we call glandular fever. We do know that children have glandular fevers resulting from acute toxic processes in the nose and throat. These mesentery glands become enlarged, cause pain, peritoneal irritation, vomiting and temperature, and they may go far as to cause a certain amount of rigidity in the abdomen.

It brings up an interesting case I saw two or three years ago when we did have an epidemic of nose and throat infections. At that time I made a diagnosis of glandular fever in a child. Two hours later an osteopath was called in and diagnosed it appendicitis. The child was taken to the hospital and the surgeons agreed with the osteopath. The child was operated on. I happened to have enough nerve to go in and watch the operation. When the child was opened up it had plenty of peritoneal fluid and what looked like a perfectly normal appendix. Just around the area of the appendix they found a large mesenteric gland as big as your thumb. The appendix was removed, sent into the laboratory and came back with a pathological diagnosis of a perfectly normal appendix.

During that same little epidemic I happened to slip up on one myself where I thought I had glandular fever and played along with it a while, decided to

operate and did have a small perforation of the appendix. So it is pretty easy to get confused, particularly on glandular fever in children and appendicitis.

An irritable bowel or spastic bowel should also be considered, especially in our more chronic cases of appendicitis, and Dr. Cummings mentioned something about this.

Inguinal hernias and even navel hernias should be kept in mind. I had a case recently where we had a portion of the mesentery, or the omentum,, rather, pulled down through one of the inguinal rings, and the child gave a history of vomiting.

Another symptom that goes along so commonly with appendicitis in children is where the little youngster holds his right leg up, wants to be up on his mother's chest, to relieve his pain. This child did that, but he had a hernia rather than appendicitis.

One other fact brings up our story of pylorospasms again. One child, thirteen months of age, that I saw gave a picture to a certain extent of appendicitis, but it happened to be a returned pylorospasm associated with diarrhea.

Of course, we know there are many other conditions that must be differentiated in this subject, but they are not so important, and time does not allow.

As to the treatment, I certainly agree with Dr. Cummings on the early operative procedures and correctly diagnosed cases. One point that is important here is the preparation of our patient before. So often we are not allowed to see the child early enough and the child is not in a good pre-operative condition. How much wiser it is to wait a few hours, and with hypodermoclysis and other ways of getting fluid into these children, get the youngster in better condition for the operation. And then after the operation we must not forget the fluids again.

Lastly, I was very much interested in his story of psychology, handling the parents and handling the child. Certainly that is a very important matter to keep in mind. We are working against all odds every time we go in to see a little sick child. Not only from the child's standpoint, but, as I have often said, the grandmother's, the neighbors', the aunts' and the uncles'.

Dr. Robert E. Cummings, Chicago: Dr. Cline points out glandular fever as a condition which must be ruled out in the diagnosis of appendicitis. That is one thing I did not include, but one that we naturally think of. You can actually feel these glands at times. They are a cause of peritoneal irritation and as a result fluid is often found in the abdominal cavity.

The child, as in the adult, oftentimes draws the right leg up or has a tendency to draw it up at least on pressure in the right lower quadrant.

I think the question of cathartics is something we are confronted with probably more than anything else. Regardless of the ailment, it seems that many parents are obsessed with the idea that their children must be thoroughly "cleaned out." The point about the administration of cathartics is well worth remembering; it would be well to forbid the use of them rather than expect any good to come from them.

THE DETERMINATION OF THE PATHOGENIC TONSIL*

PRELIMINARY REPORT OF A NEW BIOLOGIC TEST
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It is a matter of frequent occurrence for the laryngologist to be confronted by the question of what tonsil is pathologic and requires removal. As a rule this is not a difficult matter, especially when the tonsil in question exhibits gross and unmistakable signs of pathology such as redness, enlargement, debris containing crypts, injected pillars and an associated cervical lymphadenopathy. Not rarely, however, one is disturbed by a situation in which the tonsil instead of appearing pathologic is small and inoffensive, and the patient is afflicted with a systemic condition which may well be predicated upon a tonsillar infection. Investigation of all other foci of infection may be negative and the rhinologist is unable to decide as to the role of the tonsil as a possible offender. The theory of systemic disease resulting from some focus of infection is being more or less discredited, due to our inability to decide with a reasonable degree of accuracy as to just what is the offending factor. As far as the tonsil itself is concerned, a great deal of effort has been expended in ways and means of establishing whether or not it is pathologic. Thus far the trend of study has been mainly along lines of correlating the bacterial flora of the tonsil and its pathogenic status. In spite of the large amount of literature on this subject, to date all agree with Richardson¹ that no relationship has as yet been established between the bacterial flora of a tonsil and its pathogenicity. Solis Cohen² has suggested a somewhat novel departure from the usual lines of investigation. He assumes that the normal flora of the tonsil are unable to invade that structure due to the presence of bacteriostatic and bacteriocidal agents in the blood stream. If these substances are lacking the bacteria may be offenders. He tests this by culturing the bacteria found on the tonsil in the patient's own blood serum. If they survive they are assumed to be pathogenic. As yet this has not been generally accepted as a method of establishing the guilt or innocence of a tonsil under suspicion.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

Recently, Viggo Schmidt³, while investigating the physiology of the tonsil, found that upon tonsillar massage there occurred a drop in the white cell count of the peripheral blood reaching its maximum in twenty to twenty-five minutes. He explained this phenomenon by assuming that there was liberated from the tonsil what he termed a leucopenogenic substance. Massage of the pharynx or of the empty tonsillar fossae of tonsillectomized patients was not followed by any change in the white count. The phenomenon was undoubtedly dependent upon the tonsils. During his investigations he found a number of cases in which a leucocytosis had occurred instead of a leucopenia. The leucocytosis was as high as ten or fifteen thousand in some instances. Careful observation showed him that a leucocytosis only occurred in cases that exhibited gross signs of tonsillar pathology, and he therefore ascribed it to a pathologic status of the tonsil and took no further notice of these apparent contradictions. While perusing Schmidt's study, the writer was struck by the fact that massage of a normal tonsil was followed by a leucopenia and that of a pathologic one by a leucocytosis, thus laying the basis for a biologic reaction upon which one might be able to determine the presence or absence of an infective process in the tonsil in question.

In order to test out the correctness of the above assumption, a series of studies was undertaken, which involved a comparison of the white counts taken before and after massage in a number of patients. They were divided into three groups. In one group were seven patients who had had a complete tonsillectomy performed some time previous. In group two were twenty-five patients without any evidence of tonsillar infection and in whom no history of an antecedent sore throat was obtainable. These were for the most part children. In group three were thirty-four patients who had classically pathologic tonsils and in whom a tonsillectomy was indicated. In all cases a careful history was obtained and a minute examination was made in order to establish beyond question of a reasonable doubt that the tonsils were pathologic or not. All patients in group three were subjected to tonsillectomy as well as nine in group two. The excised tonsils were subjected to microscopic study and a comparison was made between the

pathologic picture presented and the results of the tonsillar massage and recorded in the accompanying tables.

Technique. A white count was made in the usual manner and the tonsils were then massaged vigorously for about two minutes. The index finger was used and was covered by a finger cot. After a wait of twenty-five minutes another white count was made and the result compared to that found before the massage was undertaken. The results are appended in the accompanying tables.

As shown by table I massage of the tonsillar fossae of the seven patients in whom a complete tonsillectomy was performed was followed by little or no change in the peripheral white count. All differences were well within limits of experimental error in the counting. It can be concluded that massage of the empty tonsillar fossae is not followed by any change in the white count. In table 2 were twenty-four patients without a history of antecedent sore throat or evidences of tonsillar infection. As these were mainly in children a fair percentage had the typical pale hyperplastic and somewhat enlarged tonsil of childhood. As can be seen from the table, every case exhibited a fall in the white count which averaged about 1,100. They varied from a fall of 600 to a fall of 2,400. Nine of the children were subjected to tonsillectomy, and as can be seen from the table none showed microscopic signs of infection but were all hyperplastic. It is evident then that massage of a normal noninfective tonsil even though it may be hyperplastic is followed by a fall in the peripheral white count.

In table 3 is found a series of thirty-four patients with definitely pathologic tonsils as judged by the usual standards. Many of these patients had systemic conditions that might be traceable to a tonsillar infection. All had a classical indication for tonsillectomy which was performed after the tonsillar massage test was made. Only twenty-one showed the expected increase in the white count. This varied from 1,800 to 24,000 and averaged about 5,600. The remaining thirteen showed either no noteworthy change or else a slight fall. The microscopic report in each case was pathologic tonsils. The contradictory findings were explained by further consultation with the pathologist. Upon careful examination of the microscopic sections it was found that in

those cases in which the predominating microscopic picture was one of infection (namely the presence of leucocytic infiltration and bacteria) were the ones in which a leucocytosis occurred upon tonsillar massage. This type of tonsil, exhibiting the picture of a more or less quiescent infection and giving rise to a leucocytosis when massaged, is the type that may be expected to act as the offender in a systemic disturbance predicated upon some focus of infection. These cases, however, in which the predominating lesion was one of fibrosis with little or no evidences of infection, were not accompanied by a rise in the white count when subjected to the test. It is evident that this type of pathology was that of a well healed lesion in a more or less noninfected and consequently innocuous tonsil. This type of tonsil is rarely, if ever, the cause of a systemic disturbance. In other words, pathologic tonsils may be roughly grouped into infected pathogenic tonsils and fibrosed nonpathogenic tonsils. It is not to be assumed, however, that a hard and fast division into the two types can be made, as various types of intermediate state can be found that grade imperceptibly from one extreme to the other. It is seen that a rise in the white count can only be obtained when the tonsil in question is the seat of an infectious process, and it might be stated that the test is not specific for a pathologic tonsil but rather for an infected pathogenic one. Consequently, a negative result from the test will not rule out a pathologic tonsil except as regards to its lack of infectivity, which, after all, is what is desired.

At this time a word of caution might be in order. The possibility that the massage might discharge a flood of organisms or toxins into the system has not been lost sight of. The test, therefore, should not be performed on any tonsil that may be acutely or subacutely inflamed. One would also be cautious in performing the test in the presence of an acute systemic disturbance that could be predicated upon a tonsillar infection.

The exact value of the test is as yet to be established. This preliminary report is given with the idea of stimulating its clinical application. Its exact sphere of usefulness, if any, must be determined. In no way is it intended to exclude careful clinical study of a case, and its use must be complimentary to such a study, and also as

a confirmatory test. In this respect it may be likened to the Wassermann test, in which the diagnosis of lues is made by careful clinical study and is then substantiated by the Wassermann test.

CONCLUSIONS

1. Massage of the empty fossae of tonsillec-tomized patients cause little or no change in the white count of the peripheral blood.
2. Massage of normal noninfective tonsils causes a fall in the peripheral white count. Hyperplastic tonsils when not accompanied by infection also cause a fall in the white count.
3. Massage of a chronically infected tonsil causes a rise in the white count, thus serving as a basis for a biologic reaction from which the pathogenic status of a tonsil in question may be determined. A healed out noninfected tonsil will not react in this manner.
4. The test is contraindicated in the presence of an acute or subacute process in the tonsils or in any systemic disturbance that may be predicated upon a tonsillar infection.

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TABLE 1

Name	Period Since Tonsillectomy	—White Count—	
		Before	After
1. C. G.	14 mo.	7,800	7,600
2. B. W.	27 mo.	9,400	9,400
3. H. G.	2 mo.	9,200	9,400
4. S. R.	6 wk.	12,800	12,800
5. I. R.	3 yr.	9,600	9,600
6. J. L.	7 yr.	7,200	7,400
7. P. E.	11 yr.	8,800	8,800

TABLE 2

Name & Age	Examination	—White Count—		Microscopy
		B. M.	A. M.	
1. M. G. 3 yr.	Normal	12,000	10,800	
2. J. K. 4 yr.	Normal	14,600	13,200	
3. R. A. 3 yr.	Normal	10,200	9,600	Hyperplastic
4. O. B. 5 yr.	Normal	13,600	12,200	" "
5. S. C. 8 yr.	Normal	9,800	8,600	
6. J. G. 3 yr.	Normal	14,600	12,800	Hyperplastic
7. C. M. 2 yr.	Normal	15,200	13,800	
8. M. T. 3 yr.	Normal	12,200	11,600	Hyperplastic
9. J. L. 2 yr.	Normal	13,600	11,800	
10. I. B. 2 yr.	Normal	11,200	10,000	Hyperplastic
11. H. D. 2 yr.	Normal	14,600	12,800	
12. A. F. 6 yr.	Normal	9,800	8,800	Hyperplastic
13. D. F. 9 yr.	Normal	8,600	7,800	" "
14. C. K. 3 yr.	Normal	12,000	11,400	" "
15. T. M. 2 yr.	Normal	12,400	10,000	" "
16. B. F. 7 yr.	Normal	10,400	8,800	
17. L. H. 4 yr.	Normal	10,200	9,600	
18. B. R. 2 yr.	Normal	11,200	10,600	
19. M. S. 3 yr.	Normal	9,800	8,200	
20. I. H. 2 yr.	Normal	11,600	9,800	

21.	J. R.	5 yr.	Normal	9,200	7,800
22.	M. S.	2 yr.	Normal	11,600	10,400
23.	S. K.	3 yr.	Normal	14,200	13,600
24.	L. M.	6 yr.	Normal	8,800	6,200

Average decrease, 1100

TABLE 3

Name	Before	After	Microscopy
1. G. L.	6,200	10,600	Infectious
2. R. M.	9,200	15,200	"
3. M. M.	12,600	35,100	"
4. P. L.	9,500	24,200	"
5. D. P.	14,600	25,500	"
6. C. B.	11,300	17,900	"
7. H. W.	11,300	9,200	"
8. R. W.	8,600	21,900	"
9. M. P.	6,500	11,700	"
10. H. A.	8,600	14,200	"
11. D. H.	11,300	14,500	"
12. M. L.	8,200	9,700	"
13. B. M.	6,200	10,800	"
14. A. C.	7,400	10,300	"
15. S. P.	9,200	26,900	"
16. D. S.	7,800	17,200	"
17. M. F.	10,200	9,400	"
18. R. S.	7,400	11,200	"
19. H. S.	9,200	14,600	"
20. M. S.	7,800	11,900	"
21. S. E.	11,000	17,200	"
Average Increase, 5600			
22. H. E.	7,200	7,600	Fibrosis
23. B. W.	9,200	8,300	"
24. C. L.	6,400	6,200	"
25. J. L.	9,400	7,200	"
26. B. S.	7,800	7,400	"
27. N. F.	8,400	7,600	"
28. H. T.	9,800	9,800	"
29. C. B.	7,600	6,900	"
30. M. R.	6,200	6,800	"
31. I. H.	8,600	7,900	"
32. L. G.	9,600	6,900	"
33. H. P.	11,200	11,600	"
34. J. B.	7,600	7,400	"

DISCUSSION

Dr. Noah Schoolman, Chicago: This has the practical value of serving to distinguish the pathogenic tonsil from the non-pathogenic. An effort has been made to explain it by the possibility that massage liberated certain organisms into the circulation in quantities sufficient to create an influence on the leucocyte count; but the other phenomenon, that non-pathogenic tonsil massage should lower the count, is more difficult to explain.

Dr. A. H. Andrews, Chicago: I have had no experience with this method of examination to determine whether tonsils are pathogenic or not, but I see an opportunity for an extensive investigation which my assistant is going to be burdened with for the next few weeks. In the sclerosed tonsil I consider the condition a third stage of chronic tonsillitis, having no systemic effect, and doing no harm unless it becomes infected. Then, having no chance to swell, the tonsil breaks down and we have the ulcerated tonsil which gives so much trouble.

Dr. M. Reese Guttman, Chicago (closing): I might point out that something similar to this phenomena has been observed before in other parts of the body. After tonsillectomy for rheumatism there is frequently a flare-up with a leucocytosis. Why does massage of the normal tonsil cause a leukopenia? The best solution

offered is that by Viggo Schmidt, namely, that the massage liberates what he terms a "leucopenogenic substance" into the blood stream.

THE PROPHYLAXIS AND EARLY TREATMENT OF LARYNGEAL TUBERCULOSIS*

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CHICAGO

A great deal has been written about tuberculosis laryngitis in the hope of establishing some definite therapeutic procedure for its cure. Much of this literature declares certain forms of treatment as the best procedure, while others are of a pessimistic nature and hold forth no hope to the poor unfortunates with tuberculous laryngitis under any treatment. Although the general physician or even throat expert, because of these divergent ideas may be placed in a quandary as to the rational therapeutic status of laryngeal phthisis, there are not a few facts about this malady that demand attention if we are to accomplish any sort of progress in its treatment.

As in the treatment of many conditions, prophylaxis plays a great role in the therapeutics of laryngeal tuberculosis. Unfortunately the prophylaxis of this condition is the prophylaxis of pulmonary tuberculosis and tuberculosis in general which still remains a profound medical and social problem. However, viewing the conditions as they still exist, with thousands upon thousands of individuals breaking down yearly under this disease of which they were unaware until too late, we are impressed at the importance of its prevention. Many of these patients who might otherwise have recovered under an early diagnosis and sanatorium treatment, finally succumb through a laryngeal involvement. Had these same individuals been hospitalized in a sanatorium in the early stages of their tuberculosis and the larynx there examined regularly by a competent laryngologist, the appalling mortality of tuberculosis would be tremendously reduced.

Of course, such an accomplishment involves a great sociological problem which has and must continue to occupy an important place in our hu-

*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

manitarian campaign. If the physician and society either through ignorance or otherwise continue to allow patients with pulmonary tuberculosis to pursue their civic duties until the disease has broken down the last barriers of resistance and has involved the larynx, the mortality from tuberculosis will not decline.

The problem of prophylaxis therefore, primarily concerns the general physician since he is the one who usually comes in contact with the patient for the first time. Even though he may be competent in coping with the general problem of tuberculosis, it may be well at this time to call his attention to complicating laryngeal symptoms that demand immediate attention, but which are so often overlooked. Remembering that involvement of the larynx is not necessarily a manifestation of late pulmonary tuberculosis, its early diagnosis therefore assumes an even greater importance since the failure to recognize it may certainly lead an otherwise hopeful case into a very unfavorable one. The presence of a laryngeal involvement is always serious because its presence indicates, in most cases, an acute pulmonary infection or a very low resistance of the individual.

Briefly, the earliest and most important symptom which should arouse suspicion of a laryngeal involvement is alteration of the voice often amounting to hoarseness. This may occur for a short period at first on getting up in the morning or may occur during the day, especially after fatigue, coughing, alcohol, talking or smoking. Later the huskiness or hoarseness may become persistent. Other symptoms as a tickling sensation in the throat, a dryness, or a feeling that "something is wrong" are not uncommon. Sometimes aphonia directs the attention to the larynx.

On laryngeal examination the early findings may be only a slight anemia, contrasted with a mottling hyperemia of the mucous membrane, or a catarrhal picture or congestion may be evident. This velvety hyperemia or catarrhal picture may not be specific for tuberculous involvement but its presence, particularly with hoarseness, demands immediate attention. Its tuberculous nature may soon be confirmed by other signs or by the advent of ulceration. Aphonia may be due to paralysis of a vocal cord due to secondary tuberculous involvement of the recurrent laryn-

geal nerve in its course. Certainly, the possibility of other causes of such a paralysis in the absence of other laryngeal findings must be considered. But the first unquestionable, definite, yet early sign of laryngeal phthisis is often the occurrence of an interarytenoid swelling, or excrescence, which becomes moulded into a peak, plateau or mound by the compression of the arytenoid bodies during adduction of the cords in speaking. A little later there appears ulceration at the center of the excrescence or in the clefts between its folds. When this occurs there is no longer any question as to its cause.

With the hospitalization of a tuberculous individual before the advent of laryngeal involvement, the patient is not so likely, under the general good care and treatment, abundant food, fresh air and vocal rest, to develop a laryngeal complication. Moreover, under such hospitalization, when an early lesion is already present, the patient is in a position where systematic periodic examinations of his larynx by experienced laryngologists and the institution of its treatment can be carried out. Here the patient learns to control his cough, tobacco and alcohol are abandoned, there is abundant nourishment at regular hours, there is little occasion to use his voice, and he receives sufficient rest and fresh air. If the patient enters the hospital with an early laryngeal involvement or develops one during his stay in the sanatorium, a definite line of treatment is immediately enforced.

The most important and essential therapeutic agents—the greatest weapons in this early combat against further progress of the laryngeal involvement—consists of prolonged vocal rest and the galvano-cautery. Such absolute silence to secure laryngeal rest, although not perfect because of the respiratory movements of the larynx, provides a most important therapeutic agent in promoting healing, and is indicated in all suspicious, recent and acute cases of laryngeal phthisis. Where there is some question in the early diagnosis of the disease, the enforcement of vocal rest can certainly do nothing but good. The duration of this silence varies from two or three to six months, depending upon the findings of the larynx and progress of the condition under its enforcement, but the addition of the galvano-cautery promises quicker results, if during this period healing has not satisfactorily ad-

vanced. Regarding galvano-cautery, however, more consideration will be presented herewith.

Communication in vocal silence is performed through writing and although this substitution often becomes a severe tax upon the patient's will-power, such depression is, however, transformed into an even more hopeful phthisical optimism when he realizes, after some time, the rewards of his vocal restriction, in contrast to his anxiety under previous laryngeal discomfort.

Where the lack of intelligence or depression of the patient does not allow the enforcement of absolute silence, or where there has resulted sufficient improvement under a prescribed silence period, whispering may be recommended. Such whispering, as seen in complete, bilateral, organic, abductor paralysis of the vocal cords, must be "lip whispering," in which the cords do not take part. Although not of great volume, it allows for distinct, easy, and practical speech and removes the ordeal of a prolonged, absolute silence. However, if not carried on by the lips alone but force strained movements of the vocal cords, its use becomes even more harmful than ordinary speech.

In this connection the reduction of cough and expectoration are also vital factors since these produce trauma and irritation of the laryngeal mucosa, thereby producing entrance foci for the tuberculous bacilli from the infected sputum that bathes its posterior region especially during the recumbent position. Although early hospitalization and sanatorium regime reduce these factors to a minimum, it may be well at this time to point out that any condition of the ear, nose, and throat causing reflex or secondary irritation to the larynx should also be corrected, remembering, however, that tuberculous patients withstand operative procedures poorly, and that such interference, therefore, may cause more harm than good.

Next to the rest as an important therapeutic agent in combating early, indolent, laryngeal phthisis, the use of the galvano-cautery is paramount. Its use, however, is employed only after the patient has undergone the test of general sanatorium care and silence under which spontaneous healing, in spite of improved general conditions, has advanced too slowly or become stationary. In other words, the galvano-cautery promises a more rapid cure if after six months

of silence, healing has made little or no progress, providing the general condition of the patient has improved. It is most promising where the lung condition is quiescent or limited and not acute. Locally, its use is best suited where the disease is limited to the interarytnoid region, vocal processes and vocal cords, where the submucosa is scant and adherent to the underlying structures and where lesions tend to indolency, limitation and fibrous tissue formation. It is less useful where an acute tuberculous process involves the arytenoid bodies, epiglottis, ventricular bands and aryepiglottic folds, where the submucosa is abundant and loose, which lend to rapid extension. Such lesions in their acute form appear pale, soggy and wet. However, its judicious use in less fulminating forms may bring about a halt to its rapid progress.

In addition one might consider other therapeutic agents in the treatment of laryngeal phthisis which have gained some popularity in the hope of finding some specific agent. Since the enthusiasm of heliotherapy had forced its way into the treatment of almost every pathological condition, its use has also been introduced in the treatment of laryngeal tuberculosis. It is to be remembered to begin with, however, that its beneficial usage is to be considered only as a possible adjuvant to the more important treatment of vocal rest and electro-cautery. Heliotherapy in the form of sun baths or its equivalent in artificial sun baths, are of unquestionable value as a general therapeutic measure and therefore indirectly of benefit to a diseased larynx. The local application of heliotherapy which has obtained some popularity is the quartz-rod application through indirect view of an ordinary laryngeal mirror or through reflection of the sun's rays or its artificial equivalent through special metallic mirrors, which successfully reflect the beneficial rays. To the latter much credit is given to Forster for its development. There are not a few followers in the judicious use of such local heliotherapy measures in the so-called early catarrhal stages of laryngeal phthisis, and its use as a method to ease pain in the more advanced stages also has its adherents. However, future reports and work in this interesting field of therapy must settle its real status as an aid in the treatment of tuberculous laryngitis. But before closing this phase of the

subject it might be justifiable to mention that many patients are intrigued by its application and that such mystery tends to add mental comfort and to relieve depression to those unfortunates who have but little time to live.

In closing, one might mention without detail the use of soothing and antiseptic sprays and the use of other applications of various drugs that have occupied such a prominent part in the armamentarium against early laryngeal tuberculosis. The benefit from the judicious use of such therapy cannot be ignored altogether, as the cleansing and soothing properties of some of them are often very grateful to the patient. Further, one cannot deny the use of drugs like orthoform which allay some dysphagias and allow the patient to obtain sufficient food and sleep. Of course, solutions like formalin or other drugs that induce irritation and cough are to be condemned, in spite of their temporary antiseptic properties. Also, the use of escharotics like lactic acid, chromic acid, as a class, have not proven their merits. Yet, from the long gamut of drugs at our disposal, the art of treatment may be exercised to some extent through a careful selection of some of them in certain individual cases, and in others for their psychological effect.

Measures like alcohol injection of the superior laryngeal nerve or its resection is confined to the advanced, more hopeless cases and is not a consideration of this paper.

SUMMARY

In the treatment of tuberculous laryngitis, prophylaxis plays a paramount role. This is accomplished by early diagnosis of the pulmonary condition and hospitalization where, under a strict regime, the general condition of the patient is improved and where an involvement of the larynx is recognized early through the frequent periodic examination of the larynx by a competent laryngologist. The most important symptoms which suggest tuberculous involvement of the larynx are a change of the voice often amounting to hoarseness, persistent huskiness, dryness or a feeling that "something is wrong." Early signs of laryngeal phthisis are a mottling congestion or a velvety catarrhal hyperemia of the mucosa, especially in the posterior region of the larynx, but the first unquestionable, definite, yet early sign of laryngeal tuberculosis is an interarytenoid hypertrophy or excrescence, with

or without beginning ulceration. It goes without saying that there are tubercle bacilli in the sputum. For the combat of early laryngeal phthisis, long continued rest of the voice is most important. Next in value is the galvano-cautery which is used when vocal rest has not produced the desired results and where improvement under vocal rest has become stationary. Of late heliotherapy, as a general and local measure, has been considered of some value as an adjuvant. The use of local drugs when judiciously selected adds much to the comfort and treatment of early laryngeal tuberculosis.

DISCUSSION

Dr. R. W. Dunham, Ottawa: Dr. Muskat has covered the treatment of tuberculous laryngitis very thoroughly and I shall say only a few words with regard to its relation to pulmonary tuberculosis.

Tuberculous laryngitis should not be treated as a separate and distinct disease but rather as a complication of pulmonary tuberculosis because improvement, or healing of the laryngeal condition depends entirely upon the healing of the original foci in the lungs. When this disease develops as a complication of pulmonary tuberculosis the prognosis immediately becomes grave, and unless the reacting powers of the patient are good the disease carries with it a high mortality rate.

The prognosis in tuberculous laryngitis may be considered somewhat as follows. In an early lesion of the larynx in which only slight ulceration has taken place the outlook for improvement and healing is usually good, provided the pulmonary condition is not of the rapidly extending type. In patients with more extensive lesions of the larynx, healing will also take place, provided the resistance of the patient is fairly good and that the lesion of the larynx is not so situated as to cause severe dysphagia, which interferes greatly with nutrition.

Those cases of far advanced, rapidly extending, pulmonary tuberculosis with an advanced lesion of the larynx, offer a hopeless prognosis, and the best that can be hoped for in these cases is to relieve the most urgent symptoms. The results to be obtained in the management of tuberculous laryngitis depend primarily upon the type of pulmonary lesion and the time of diagnosis. Here we must again emphasize the importance of early diagnosis, as in pulmonary tuberculosis, and although this term may seem somewhat timeworn and battle scarred, we must admit that it is the nucleus about which we must weave our hopes for the future success in the treatment of either condition until such time as some more effective methods are introduced into medicine. It would probably be well if the larynx were inspected during the routine examination of patients suffering from pulmonary tuberculosis because infection of this organ is a common complication and is often present when unsuspected.

On the other hand, a thorough examination of the lungs should be recommended in those patients present-

ing themselves for examination of the larynx on account of frequent attacks of hoarseness, or impairment of voice, in whom no definite lesion of the larynx can be established, because it has been conclusively proven that early pulmonary tuberculosis can produce hoarseness, or even aphonia, through irritation of the recurrent laryngeal nerve.

It would seem then that the success of the treatment of laryngeal tuberculosis depends upon,—first, early diagnosis of the condition,—second, reacting powers of the patient,—third, the type and extent of the pulmonary lesion,—and fourth, the location of the lesion in the larynx.

Dr. C. D. Thomas, Peoria: In 1896 when working in Vienna we had a great number of cases of tuberculosis in the Hajek Clinic. I remember translating a work done by Hajek where he and Wokes had a considerable discussion on the question of the local conditions in laryngeal tuberculosis, as to whether the local condition was primary or secondary. At that time Hajek contended that the local condition was invariably a manifestation of a constitutional condition; that it never came primarily. The many cases that came into the clinic for two years seemed to prove that contention. Dr. Muskat spoke of nodules and the appearance of the arytenoid bodies. There was a contention at that time that the infallible diagnostic symptom was the elevations in the arytenoid commissure, but I think one other symptom always prevails. You will find, always, a reddened edematous area at the base of the arytenoid cartilage, which means, I suppose, not only a tuberculous manifestation in the articulation but also at the base of the arytenoids. As to treatment, we tried out all sorts of treatments; the thing then was scarification and the use of acetic acid. That was a failure. I remember one case that showed the disease beginning on the upper rim of the epiglottis, and day after day, month after month, the process ate its way along until it completely consumed the cartilage. No treatment seemed to stop the process once it was started because this local condition is always secondary to the pulmonary disease.

Dr. I. I. Muskat, Chicago (closing): I want to thank Dr. Dunham and the others for showing such keen interest in this subject. In closing a few words might be said in answer to some of the questions that have come up. It must be remembered that laryngeal tuberculosis is, practically speaking, always secondary to a pulmonary tuberculosis and the larynx is directly infected from the coughed-up sputum, although some have tried to show, at least, theoretically, that a laryngeal involvement may arise as a metastatic affair from a tuberculous focus in the lungs or elsewhere, just as one might get a metastatic involvement in the choroid or brain. There are only isolated cases in the literature which only tend to show that such an occurrence might be possible or that a laryngeal tuberculosis can be primary.

In arriving at an early diagnosis of laryngeal tuberculosis, clinically, the first definite signs are usually the excrescences in the interarytenoid region, while the

vocal processes and vocal cords, particularly in the posterior region, are also often involved early. The catarrhal picture described, however, is pathologically the first finding as proven by later post-mortems, although clinically one may lay such a catarrhal picture to irritation or secretion or coughing. Of course, a catarrhal picture with a pulmonary tuberculosis must be looked upon with suspicion.

In regards to the prognosis in pulmonary tuberculosis with laryngeal involvement it is evident that a laryngeal complication immediately renders the prognosis worse. Thus St. Clair Thomson has divided tuberculous laryngitis as to prognosis into three groups according to the amount of pulmonary involvement; essentially viz.: group 1 having early lung involvement, group 2 having moderate, and group 3 having marked and hopeless lung involvement. A tuberculous involvement of the larynx, even in a very early lung condition moves the prognosis of an otherwise group 1 into group 2; and a tuberculous involvement in an otherwise group 2 patient places him immediately into the hopeless group 3 division. That an involvement of the larynx markedly changes the prognosis for the worse is without doubt. Of course the prognosis may be viewed from another angle; viz. that a laryngeal involvement will not get worse while the pulmonary condition improves.

In summing up this phase of the subject I may do well in quoting St. Clair Thomson, who states: "A larynx may improve or get well, while the lung disease remains quiescent or gets worse; but if the disease in the larynx advances, the pulmonary disease cannot possible become arrested and soon makes progress." Therefore, early diagnosis of laryngeal involvement and its early decisive treatment becomes paramount in the treatment of the lung as well as the laryngeal condition itself.

Society Proceedings

ADAMS COUNTY

The regular monthly meeting of the Society was held in the Elks' Club Hall on Monday, April 14. The meeting was preceded by a dinner at 7:30 P. M. at which there was a total attendance of twenty-six.

The Scientific Meeting was called to order at 8:15 P. M. by the president, with 46 in attendance.

Dr. Warren Pearce was the first speaker and he gave a brief report of the 1930 meeting of the American College of Physicians held at Minneapolis. This was followed by a very interesting paper on "Surgery of Gastric and Duodenal Ulcer" by Dr. Karl A. Meyer, Associate Professor of Surgery, Northwestern University, Chicago. This was discussed by Drs. Miller, Jurgens, Swanberg, Nickerson, Cohen, Molz, Koch, and finally closed by Dr. Meyer.

Then next paper read was: "Chronic Obstruction of the Vesicle Neck in the Male" by Dr. Harry Culver, Associate Professor of Genito-Urinary Diseases, Northwestern University, Chicago. This was discussed by Drs. Pollock, Shulian, Miller, Nickerson, Cohen, Zimmerman, and finally closed by Dr. Culver.

Dr. Nickerson made a motion that we give the speakers a rising vote of thanks for their courtesy in making the trip to Quincy to address us. Carried.

The President announced that Mr. Emmet Wilson, Manager of the company who is undertaking the publication of the *Quincy Medical Bulletin*, desired to address the Society in regard to better cooperation in securing advertisers for the Bulletin. Mr. Wilson then made a brief talk outlining the present difficulties of the *Bulletin* and stated that the physicians as a whole were not cooperating and unless better support was secured, it would be necessary that his company discontinue the publishing of the *Bulletin*. He stated that it would be necessary for his organization to secure \$35 a month more in advertising revenue than was at present being received in order to make it profitable for them to continue the publication.

The matter of securing better cooperation from advertisers in the *Bulletin* was then discussed. Dr. Koch made a motion that the President appoint a committee of three to cooperate with the present publishers in order to enable them to secure additional advertising revenue. Carried. The President appointed Dr. Wells, Koch, and Irwin.

The meeting adjourned at 11:35 P. M.

HAROLD SWANBERG, M. D., Secretary.

ALEXANDER COUNTY

The meeting was held in the Halliday Hotel, Cairo, April 18, with ten of the eighteen members present and three visitors from Pulaski County.

Clinical cases were presented as follows: Dr. Bondurant, "Unruptured Ectopic Pregnancy"; Dr. Weber, "Varicella and Scarlatina at the Same Time in a Family of Five"; Dr. Hudson, "Epididymitis and Orchitis of Obscure Origin"; Dr. Davis, "Poisoning in a Child from Swallowing Jamestown Weed Seed"; Dr. Dickerson, "Laceration and Hemorrhage from a Girl's External Genitals from a Boy's Vicious Use of a Stick"; Dr. Miller, "Ruptured Hemorrhagic Cyst of an Ovary"; Dr. Hutcheson, "Severe Injuries Following Automobile Accident Complicated by a Complete Paralysis of Divergence."

Dr. Barrows presented the main subject of the evening in an oration on "Gall Bladder Surgery." The discussion on this was opened by Dr. McManus and engaged in by all present.

It was announced that Dr. Hudson would be the essayist for the May meeting which was postponed from the third 'till the fourth Friday in the month at the suggestion of the Secretary in order to be able to hear the report of Dr. Bondurant, the delegate to the State meeting at Joliet. It was voted to make the September meeting, which will be the first after the summer vacation, a dinner meeting, and the Secretary was authorized to secure an out-of-town speaker for the occasion.

JAS. W. DUNN, Secretary.

ALEXANDER-PULASKI COUNTIES

A joint meeting presided over by Dr. P. H. McNemer of Alexander County and Dr. W. R. Mesenberg of Pulaski County Society was held, March 26, at the

Clendenin high school in Cairo. Nearly 100 citizens, including physicians, educators and city officials attended.

Dr. Andy Hall, state director of health, and Dr. C. P. Coogle, of the United States Health Service, discussed conditions in this state, and in southern Illinois. Following a lecture by Dr. Coogle, dealing especially with mosquito elimination and eradication of malaria, a three-reel moving picture was shown which pictured the operation of the malaria parasite in the blood cells of the human body, showing how the disease was transmitted from an infected person to a healthy one by the malaria carrying mosquito, the various phases in the development of the parasite from the laying of the mosquito eggs until malaria had developed in the body of the person bitten. This film showed various methods of prevention, drainage to remove breeding places, oiling and poisoning to kill the mosquito larvae, screening to prevent entrance of mosquitoes to the home, and medical treatment to restore the stricken to health.

Southern Illinois had 21,000 cases of malaria last year. Malaria is the yoke upon the necks of the people of southern Illinois. Its peak production is reached in July and August and it develops within three weeks after the malaria mosquito begins doing business about that time. And its results last for eight months. Discontinuance of "home" treatment, taking of chill tonics and other nostrums was advised and the substitution of scientific medical treatment was urged. After the doctor has prescribed, continue taking his medicine; don't stop after taking a few doses—stay with the doctor until cured.

One-eighth fewer bites of mosquitos occur in screened than unscreened houses while there are 32 times more chills in unscreened than screened homes. Proper and improper methods of screening were shown and the film was a most interesting visual demonstration of what to do and how to do the things that will bring health and happiness to every district struggling under the heavy economic financial and physical burden of malaria affliction.

Dr. Andy Hall spoke of smallpox, tuberculosis, typhoid fever and diphtheria as the worst offenders among the diseases. Twelve years ago Illinois had 12,500 cases of smallpox annually. Last year it had 2,500 cases. Thirty years ago 2,000 persons died each year from typhoid fever. Last year 110 died, mostly in southern Illinois. But Cairo had no deaths from smallpox, typhoid fever or diphtheria.

Last year Illinois had 8,550 cases of diphtheria and 750 deaths. At Mooseheart where there are from 1,200 to 1,500 children, all of whom are immunized upon entrance to that institution, there was but one case of diphtheria last year.

Dr. Hall gave interesting statistics regarding smallpox, one of the oldest of human afflictions. In 13 years Illinois has had 43,000 cases. Each of these cases was quarantined for a period of 21 days and an average of one other person was quarantined with each patient. The economic loss of productive labor alone involved in these cases was tremendous to say nothing of the financial cost. But a good vaccination law would have

prevented most of it. By means of charts, Dr. Hall showed that Illinois had the worst smallpox record in the United States. Illinois had 4,228 cases in 1929. With greater population, New York state had 289, Pennsylvania but 53, while the District of Columbia had none, Maryland none, New Mexico 79, Arkansas 192, Kentucky 563, West Virginia 591 and Rhode Island none. Dr. Hall's chart showed that Illinois had 2,000 cases more than the 12 states he used for illustration, and at least two of these states, New York and Pennsylvania had vastly greater populations than Illinois. This comparison was extended to a number of foreign countries and it was shown that Cuba and the Philippine Islands had only a small percentage of cases compared to the great state of Illinois. He then asked the significant question of whether or not the Philippines were more enlightened than the sovereign state of Illinois.

Urges Better Laws

His talk led to discussion of the inadequacy of present laws for the enforcement of preventive measures. The state furnishes preventive treatment but in most cases its laws are not sufficiently comprehensive to permit enforced acceptance and use of the treatment provided. This phase of his talk went into the matter of social diseases and more drastic marriage laws were urged by the head of the state's health department in a frank talk which was freighted with some alarming figures as to the increasing burden of the state due to crime and mental diseases resulting from marriages between people unfitted for it physically and mentally.

COOK COUNTY

Chicago Medical Society joint meeting with Chicago Society of Industrial Medicine and Surgery, April 2.

Aggravation of Pre-Existing Disease by Trauma, Volney Cheney, Medical Director of Armour & Company. Discussion: S. S. Graves and A. V. Allen.

Slitlamp in the Diagnosis of Interocular Foreign Bodies, Ramon Castroviejo. Discussion: Sydney Walker and O. B. Nugent.

Joint Meeting of Illinois Society for Mental Hygiene and the Chicago Medical Society, April 9.

State Hospitals for Mental Diseases, opening remarks, Charles B. Reed, M. D., President, Chicago Medical Society.

The Modern Hospital for Mental Cases: Its Special Requirements, H. Douglas Singer, M. D.

A Modern Institution for the Feeble-minded: Its Special Requirements and Problems, Charles F. Read, M. D.

A Review of the Program and Work with Conditions in Illinois by the Illinois Society for Mental Hygiene, Ralph C. Hamill, M. D., President.

Chicago Medical Society regular meeting, April 23.

Legislative Work of the State Medical Society, John R. Neal, Chairman of the Legislative Committee of the Illinois State Medical Society.

RANDOLPH COUNTY

The April meeting was held in Evansville, April 15. The meeting was called to order by the president, at

2 P. M. After the usual business was attended to the delegates to the Illinois State Medical Society were elected. Dr. E. A. Pautler of Red Bud, was elected delegate and Dr. J. W. Weir of Sparta, was elected alternate.

Following the business meeting Dr. Albert Fritze, of Chester, gave a very interesting talk on "Bronchiectasis." This talk was discussed by Dr. E. A. Pautler especially along the scientific lines.

Dr. E. A. Pautler gave a paper on "Amenorrhea," which was very clear and full in its treating of the condition. He divided it into two varieties: one termed Primary Amenorrhea and is applied to those cases in which menstruation has never appeared; and the other he termed Secondary Amenorrhea and is applied to those cases in which menstruation has ceased after having once been established. This paper was discussed by several members of the society.

Dr. Louis Smith of Chester gave two case reports on cases of typhoid fever that he had had. One of these cases was especially severe and after describing the case and its condition very thoroughly he put a question box to the society and asked what it would do as to the management and treatment of such conditions. This report was discussed from its various angles and conditions by every member present. Then Dr. Smith gave us the treatment he used with success in the management of the cases.

The Ladies Auxiliary met at the same time in separate session and elected delegates to the State Auxiliary meeting at Joliet.

The Ladies Auxiliary extends an invitation to the Medical Society to a dinner at the next regular meeting to be held at 7:00 P. M., May 14, at Hotel Bates, Sparta, Ill. This invitation was accepted by the society with a unanimous vote and much appreciation.

Marriages

HOWARD P. SLOAN, Bloomington, Ill., to Miss Esther Marie Olsen of Pasadena, Calif., March 1.

Personals

Dr. Edward L. Cornell showed moving pictures on eclampsia, face and breech delivery before the Brooklyn (N. Y.) Medical Society, March 31.

Among others, Dr. John L. Yates, Milwaukee, addressed the Chicago Surgical Society, April 4, on "Making and Closing of Laparotomy Wounds."

Dr. Cleveland J. White, Chicago, spoke before the McLean County Medical Society, Bloomington, April 8, on "Diseases of the Mucous Membranes of the Mouth, as Encountered in Dermatologic Practice."

Dr. Edward H. Ochsner lectured, April 16, in

the New Library Building, University of Illinois College of Medicine, on "Medical Economic Fundamentals, or the Business Side of Medicine."

Dr. Paul Klemperer, New York, addressed the Research Club of the College of Medicine, University of Illinois, April 9, on "Arteriolonecrotic Nephrosclerosis."

Dr. Clifford Grulee addressed the Leslie Lewis Parent-Teacher Association April 3.

Dr. Charles H. Miller gave a health talk on April 3 at the Rogers Park Kiwanis Club.

Dr. Gerard Krost addressed the Parent-Teacher Association of the Bennett School, Chicago, on April 9.

Dr. Reinhold Schlueter gave a health talk before a South Side Parent-Teacher Association on April 2.

Dr. William S. Sadler spoke in the First Methodist Church of Urbana, Sunday morning, April 27.

Dr. Edward N. Schoolman talked to the Roosevelt Senior High School Parent-Teacher Association April 1 on "Understanding the Adolescent."

Dr. George W. Post, Jr., talked to a group of Boy Scouts on April 1 on "Sex Hygiene."

Dr. J. P. Simonds addressed the Chicago Council of Jewish Women April 1 on "Early Danger Signals of Cancer."

Dr. Clement L. Martin, Chicago, addressed the physicians of Iroquois County, March 28, at Watseka on "Treatment of Hemorrhoids by Non-surgical and Operative Methods."

Dr. Wallace S. Grosvenor gave a paper on "Thirty Years of Obstetrical Experience" before the Will-Grundy County Medical Society at Joliet, April 2.

Dr. Arthur J. Cramp gave an illustrated lecture, "Pink Pills for Pale People," before the Woman's Association of the First Presbyterian Church, Chicago, April 10.

Dr. T. B. Hodges has resigned as medical director of Elm Grove Sanatorium, Bushnell, and taken a similar position with LaVina Sanatorium in Pasadena, Cal.

Dr. Frederic W. Schlutz, head of the pediatrics division of University of Minnesota, has been appointed director and will organize the Bobs Merrill Memorial Hospital for children of the University of Chicago.

Michael Zimmer, Warden of Cook County Hospital, addressed the Physicians' Fellowship

Club on Friday, March 28, at the Logan Square Masonic Temple on "My Experience with Prisoners as Warden of Joliet Penitentiary."

Dr. Max Biesenthal, Director of Winfield Sanatorium and member of the Board of Directors of the Chicago Tuberculosis Institute, addressed the Morgan County Medical Society, April 22, at Jacksonville, Illinois, an "The Place of the Sanatorium in the Community."

Dr. Joseph Greengard gave a talk on "Safeguarding Our Children" before the Parent-Teacher Association of the Glidden Training School, at DeKalb, April 8.

Dr. Gilbert Fitz-Patrick has purchased a copy of the Canti film which he announces is at the disposal of members of the Medical Society. Previously there has been but one copy in the State, and it has been impossible to grant all requests made for it.

Dr. Leonarde Keeler, of the Institute of Juvenile Research, addressed the Physicians Fellowship Club, April 25, on "The Role of Science in Crime Detection," and demonstrated the "Lie Detector" recently purchased by Professor Volmer of the University of Chicago.

Dr. C. L. Whitmire (Morgan County Medical Association), who has been stationed as Neuropsychiatrist with the U. S. Veteran's Bureau at the hospital in Augusta, Georgia, for the past five years, is now located in a like capacity with the U. S. V. Hospital in Knoxville, Iowa.

Dr. R. W. McNealy addressed the Clinton County Medical Society, at Clinton, Iowa, April 29, on "Important Points in Surgery of the Right Upper Quadrant of the Abdomen."

Dr. Clarence J. McMullen addressed the same Society on "Heart and Hypertension."

News Notes

—The name of the Catholic-Cook County Hospital Association was recently changed to the Chicago Hospital Association; J. Dewey Lutes, superintendent of the Lakeview Hospital, Chicago, is president.

—The Chicago Gynecological Society was addressed, April 18, by Drs. Mark T. Goldstine and Samuel J. Fogelson on "Treatment of 'Irregular Uterine Hemorrhage' by the Female Sex Hormone," and by Dr. Gustav Kolischer on "Cystitis and Pyelitis in the Female."

—The Chicago Society of Industrial Medicine

and Surgery was addressed, April 2, by Dr. Volney S. Cheney on "Aggravation of Preexisting Disease by Trauma," and by Dr. Ramon Castroviejo on "Slit Lamp in the Diagnosis of Interocular Foreign Bodies."

—Rear Admiral Norman J. Blackwood, U. S. Navy, who retired from the service in January, has been appointed superintendent of the Provident Hospital and Training School.

—Dr. Francis R. Packard, Philadelphia, gave an illustrated lecture on "William and John Hunter, a Study in Contrasts," before a joint meeting of the Institute of Medicine and the Society of Medical History of Chicago, March 28.

—The Chicago Urological Society was addressed, March 27, by Dr. Samuel J. Sullivan on "Gonorrheal Keratosis"; by Dr. Robert E. Cumming, Detroit, "Urography: The Development of a New Method with Physiologic Data," and by Drs. Harry B. Culver and Walter F. Hoepfner, "Management of a Case of Bilharziasis."

—The Chicago Laryngological and Otological Society was addressed, April 7, by Dr. William Bloom on "Anatomy and Histology of Reticulo-Endothelial System," illustrated; Dr. Paul R. Cannon on "Reticulo-Endothelial System as a Defensive Mechanism," and Dr. Samuel M. Feinberg on "Nasal Allergy as Related to Hyperesthetic Rhinitis and Hay-Fever."

—Dr. Anthony J. Lanza, New York, gave an address on "Tuberculosis in Industry" before the new industrial department of the Chicago Tuberculosis Institute, April 25. The occasion marked the renewal of the industrial conferences of the institute inaugurated more than twenty years ago by the late Dr. Theodore B. Sachs. Dr. Harry E. Mock spoke on "Tuberculosis Among Chicago Industries."

—A joint meeting of the Chicago Roentgen Society and the Chicago Orthopedic Club was addressed, April 10, by Dr. John R. Mitchell, Joliet, Ill., on "Charcot Spine Associated with Hypertrophic Arthritis"; Dr. Charles A. Parker, "X-Ray Appearances in Actinomycosis and Blastomycosis of the Spine," and Dr. Edward S. Blaine, "Post-Traumatic Vertebral Collapse."

—The staff of St. Anthony's Hospital, Rock Island, held its third annual clinic, April 23; Drs. Ralph B. Bettman and Max Biesenthal, Chicago, and Dr. Roswell T. Petit of Ottawa presented a symposium on the diagnosis, medical

and surgical treatment of tuberculosis; Dr. Frederick H. Falls, Chicago, spoke on "Eclamptogenic Toxemia," and Dr. George W. Parker, Peoria, "Blood Dyscrasias."

—A joint meeting of the Illinois Society for Mental Hygiene and the Chicago Medical Society was held, April 9, the speakers and the subjects being Drs. H. Douglas Singer, "Modern Hospital for Mental Cases: Its Special Requirements"; Charles F. Read, "A Modern Institution for the Feeble-minded: Its Special Requirements and Problems," and Ralph C. Hamill, "Review of the Program and Work with Conditions in Illinois by the Illinois Society for Mental Hygiene."

—Friends and colleagues of the late Doctor Louis A. Greensfelder have given \$10,000 to the Michael Reese Hospital for endowing the Louis A. Greensfelder Lectureship Fund.

—The Chicago Medical School has purchased from the Frances B. Willard Hospital, the property at 710 South Lincoln Street. It will move into its new quarters during June, so that school will open in the new building next September.

During the first month next fall, a homecoming day will be observed, with suitable exercises. This new, commodious and up-to-date plant will give the school the opportunity for expansion which it has sought for several years.

Its Dispensary service will at once be enlarged many fold. It will be able to undertake a series of research problems having to do with the cause, course and prevention of disease.

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Deaths

LUDWIG H. ABELE, Chicago; University of Freiburg, Germany, 1892; a Fellow, A. M. A.; on the staffs of the Alexian Brothers Hospital and the Evangelical Deaconess Hospital; aged 64; died, April 12, at Camp Walton, Fla., of angina pectoris.

THOMAS N. AUSTIN, Genoa, Ill.; Michigan College of Medicine and Surgery, Detroit, 1891; aged 68; died, April 3, of an infection of the throat.

RHODA PIKE BARSTOW, Chicago; General Medical College, Chicago, 1888; formerly professor of obstetrics at Hering Medical College; since 1911, superintendent of the Daily News sanitarium in Lincoln Park; member of Chicago Council of Medical Women and American

Institute of Homeopathy; aged 77; died, April 9, of cerebral hemorrhage.

JULIUS J. BOEHEIM, Duquoin, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; a Fellow, A. M. A.; aged 64; died, March 18, of heart disease.

JULIAN ALFRED BRAHAM, Chicago; University of Illinois College of Medicine, Chicago, 1909; a Fellow, A. M. A.; on the staff of the Lutheran Memorial Hospital; aged 46; died, April 8, of endocarditis and septicemia.

ALBERT ROSCOE CARTER, Murphysboro, Ill.; Missouri Medical College, St. Louis, 1895; member of Illinois State Medical Society; president of Murphysboro chamber of Commerce and director of Citizens' State and Savings Bank; aged 63; died, April 9, in St. Andrew's hospital, of cerebral hemorrhage.

HIRAM LEWIS COSBY, Pekin, Ill.; Rush Medical College, Chicago, 1889; aged 63; died, March 28, of a self-inflicted bullet wound.

JOHN SCUDDER DAVIS, Chicago; Eclectic Medical Institute, Cincinnati, 1883; a former member of Illinois State Medical Society; on medical staff of U. S. Army in Spanish-American War; on staff of South Chicago hospital and surgeon for several railroads; aged 67; died, March 15, in South Chicago hospital, of carcinoma of the mouth.

GAY DORN, Chicago; Chicago Medical College, 1883; aged 75; died, March 22, probably of angina pectoris and arteriosclerosis.

WILLIAM J. EDDY, Shelbyville, Ill.; College of Physicians and Surgeons, Chicago, 1885; past president of the Shelby County Medical Society; formerly mayor of Shelbyville; aged 72; died, March 17, in Los Angeles, of gastric hemorrhage.

HAROLD O. EVENSEN, Chicago; College of Physicians and Surgeons, Chicago, 1894; a Fellow, A. M. A.; aged 61; died, April 2, of cerebral hemorrhage.

JOHN B. EWING, Chicago; Detroit College of Medicine and Surgery, 1886; member of the Illinois State Medical Society; aged 73; died, March 26, of myocarditis and from the effects of smoke inhaled when the store below his apartment caught fire.

CHARLES L. HAMILTON, Dwight, Ill.; Missouri Medical College, St. Louis, 1880; a Fellow, A. M. A.; aged 70; died, March 16, at St. James Hospital, Pontiac, of pernicious anemia.

HUGO HEROLD, Wascoutah, Ill.; Missouri Medical College, St. Louis, 1894; aged 60; died, April 1, of heart disease.

ARTHUR E. HIGGINS, La Grange, Ill.; Rush Medical College, Chicago, 1886; aged 68; died, March 29, of heart disease.

A. AMIL KJELLBERG, Chicago; Hahnemann Medical College and Hospital, Chicago, 1890; aged 83; died, March 26, of coronary thrombosis and arteriosclerosis.

MARTIN KOSTELNY, Chicago; Chicago Medical School, 1927; a Fellow, A. M. A.; aged 28; died, April 2, of acute dilatation of the heart, following myocarditis.

HENRY DALLAS LARUE, Mt. Carmel, Ill.; Miami Medical College, Cincinnati, 1881; aged 74; died, April 8, of senility.

EDGAR H. LITTLE, East St. Louis, Ill.; Marion-Sims College of Medicine, St. Louis, 1900; member of the Illinois State Medical Society; formerly postmaster of East St. Louis; aged 57; died, March 1, of heart disease.

MICHAEL JOSEPH MCKENNA, Chicago; Rush Medical College, Chicago, 1882; aged 76; died, April 9, of carcinoma of the larynx.

ROBERT H. MICHEL, Great Lakes, Ill.; Rush Medical College, 1900; a naval surgeon, Lieutenant U. S. N.; with service in China and the orient, and later on recruiting service here; aged 51; died, April 4, in Great Lakes hospital, of heart disease.

FRANK LOUIS MUELLER, Chicago; College of Physicians and Surgeons, Chicago, 1895; aged 64; died, March 20, at the Elgin (Ill.) State Hospital, of cerebral arteriosclerosis.

JOSEPH MCINTYRE PATTON, Chicago; New York University Medical College, 1882; former president of Chicago Medical Society; a member of American College of Physicians; former president of the Pathological society; professor emeritus of clinical medicine of University of Illinois college of medicine; aged 69; died, April 16, of chronic myocarditis.

DAVID BARTON PENNIMAN, Rockford, Ill.; Northwestern University Medical School, 1893; aged 63; died, March 28, in Tampa, Florida, after a long sickness.

WILLIAM PLUMER, Farmington, Ill.; Keokuk Medical College, 1894; aged 63; died, March 29, in St. Francis Hospital, Peoria.

JOHN E. SCHOONOVER, Salem, Ill.; Kentucky School of Medicine, Louisville, 1889; aged 64; died, April 10, after long invalidism.

ISAAC NEWTON SMITH, Chicago; State University of Iowa Medical College, Iowa City, 1892; aged 70; died, March 25, of cerebral hemorrhage and myocarditis.

JOSEPH GIDEON STROMBERG, Chicago; Dearborn Medical College, Chicago, 1907; A Fellow, A. M. A.; aged 47; on the staff of the Swedish Covenant Hospital, where he died, March 31, of septicemia, as the result of an injury to his finger.

JULIUS H. TASCHER, Prophetstown, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1891; aged 65; died, March 27, at the Jane Lamb Hospital, Clinton, Iowa, of chronic nephritis.

BERNARD JOSEPH TYNAN, Chicago; Creighton University School of Medicine, Chicago, 1927; aged 29; died, March 9, of injuries received in an automobile accident.

ALVIN HERBERT WHITNEY, Chicago; Illinois Medical College, Chicago, 1904; member of the Illinois State Medical Society; aged 51; died, March 26, of pulmonary embolism and postoperative hernia.

JOHN D. YOUNG, Brookport, Ill.; Louisville (Ky.) Medical College, 1874; Civil War veteran; aged 85; died, March 8, of diabetes mellitus.

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Illinois Medical Journal

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State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

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Editorials

THE 1930 ANNUAL MEETING

The 1930 Annual Meeting held in Joliet May 20-22, 1930, was one of the most successful meetings the Society has ever held. The attendance was approximately 1,200, and the total ladies' registration was 381, the largest number of ladies ever attending an annual meeting of the Illinois State Medical Society. The Committee on Arrangements at Joliet had arranged everything to the best interests of the many members and visitors. The programs were all carried out according to the official program. At the open meeting on Tuesday evening, the Joliet National High School Champion Band gave a 45 minute concert which was greatly appreciated. Mrs. George T. Palmer, State Probation Officer, gave a highly instructive talk on probation work, showing the efforts of the State of Illinois in this type of work. The President's Dinner was well attended, the service at the dinner given by the Eastern Star, in the Masonic Temple. Ten past presidents were present and introduced by the toastmaster, J. P. Simonds. The Joliet State Champion High School Orchestra played during the dinner. Following the president's dinner, the President's Address was given by F. O. Fredrickson, his subject being "A Forward Look into Medical Practice," and it was a very important contribution to the literature on Medical Economics. Martin E. Rehffuss, of Philadelphia, delivered the Oration in Medicine, his subject being "Some Real Problems in Modern Medicine," and it was highly interesting, well received and well rendered.

The exhibits were unusually good, both as to the commercial and the scientific exhibits. The Joliet Chamber of Commerce, where the exhibits were shown, was unusually cooperative, turning their entire building and facilities over to the Society for the meeting.

The following officers were elected at the closing meeting of the House of Delegates:

President-elect—R. R. Ferguson, Chicago.
 1st Vice President—B. G. Wilcox, Joliet.
 2nd Vice President—Otto Huber, Chicago.
 Treasurer—A. J. Markley, Belvidere.
 Secretary—Harold M. Camp, Monmouth.

Drs. Charles D. Center, Quincy; J. W. Hamilton, Mt. Vernon, and J. S. Templeton, Pinckneyville, were reelected to succeed themselves as members of the Council, and Thomas P. Foley, of Chicago, was elected to succeed R. R. Ferguson as a member of the Council.

The by-laws of the Illinois State Medical Society were changed to permit the induction of the president-elect at the closing meeting of the House of Delegates. William D. Chapman, of Silvis, was inducted as President of the Society immediately after the final business was transacted by the House of Delegates.

A number of important resolutions were adopted by the House of Delegates, which will appear in the printed transactions of the House of Delegates in the July number of the ILLINOIS MEDICAL JOURNAL.

The following officers were elected by the Scientific Sections for the ensuing year:

Section on Medicine

L. D. Snorf, Chairman, Chicago.
 Warren Pearce, Secretary, Quincy.

Section on Surgery

J. H. Bacon, Chairman, Peoria.
 James T. Gregory, Secretary, Chicago.

Section on Public Health and Hygiene

Chas. H. Miller, Chairman, Chicago.
 Arlington Ailes, Secretary, La Salle.

Section on Eye, Ear, Nose and Throat

Harry S. Gradle, Chairman, Chicago.
 W. C. Williams, Secretary, Peoria.

Section on Radiology

Henry W. Grote, Chairman, Bloomington.
 E. L. Jenkinson, Secretary, Chicago.

Secretaries' Conference

I. L. Foulon, President, East St. Louis.
 W. D. Murfin, Vice President, Decatur.
 Harold Swanberg, Secretary, Quincy.

East St. Louis made a strong appeal to the House of Delegates for the 1931 meeting, it having been thirty-three years since the Society last met in that city. Others from Southern Illinois outside of St. Clair County added their appeal for a Southern Illinois Meeting, assuring the House that it would be a Southern Illinois meet-

ing instead of a strictly East St. Louis affair. The House of Delegates voted unanimously to go to East St. Louis next year, subject to the approval of the Council.

In a lengthy resolution the House of Delegates gave a special vote of thanks to all those in Joliet who aided in making the guests welcome at the 1930 meeting—the Will-Grundy Society, the Mayor and City officials, the Chamber of Commerce and its efficient Secretary, the hotels, Ladies' Entertainment Committee, the Eastern Star organization, and the efficient General Chairman of the Arrangements Committee, B. G. Wilcox, for his work.

By the cooperation received, Joliet has been added to the list of Illinois cities which are to be commended for their efforts in planning conventions, and all in attendance at this meeting went away with a friendly feeling for the city and its residents.

CHARITY: HOW MANY LAY ABUSES
 AGAINST THE MEDICAL PROFESSION
 ARE COMMITTED IN
 THY NAME!

In the face of indubitable figures carefully attained is set forth clearly the fallacy of asking for further "charity" from physicians. Especially is this true in the lay campaign for reduced medical fees.

Doctors who are honest with themselves and with their ledgers have long admitted that in the majority those of the profession who are men of wealth have gained their emoluments in other ways than from direct income from patients.

Either by inheritance, investments in stocks of real estate or commercial ventures, and sometimes even by matrimonial affiliations, has come the acquisition of material goods to the average doctor.

As a matter of fact, physicians disburse more actual charity, dollar for dollar on a pro rata income basis, than does any other branch of American citizens.

In Fordham's magazine under date of July 29, 1930, statistics drawn from the personal practice of 3,284 physicians showed these returns:

Average income in
 Towns of 5,000 population.....\$4,800
 Towns of 20,000 population..... 6,369

Cities of 50,000 population.....	7,022
Metropolitan centers	7,125

This is a lamentable return when compared with the average salaries of teachers, commercial and industrial employes of importance and of labor in other avenues of life.

The figure of \$7,125 per annum for physicians in metropolitan centers is an average of slightly less than \$600 per month, or than \$150 per week. Scrutiny of payrolls of employes of municipalities, industries and commercial institutions would reveal that a salary of \$150 per week is considered picayunish for men and women of importance in these walks. In the learned professions it would quite often be sneezed at. And bear in mind that *in none of those industries or professions is barefaced appeal made for free labor such as is everlastingly demanded from physicians for expert services. Yet these same classes of citizens are augmenting the movements to provide more and more free medical service and more and greater usurpation of the province of medical practice by providing free or part pay clinics for the middle classes and by the extension of the scope of medical practice by universities, by hospitals, and by tax supported institutions, or foundations.*

Contrast such activity with the complaint made recently by the Chicago Garage Owners Association against the parking of automobiles on the public streets after 1 a. m. The Chicago garage owners' union has been attempting to force the police commissioner to utilize his department to arrest all owners leaving their cars out on the city streets after 1 a. m. with the motive back of the movement the contention of the garage owners that they cannot continue in business and compete with the city as a free parking place. Removal of the cars from the tax-supported thoroughfares would naturally force them into the nearest garage. The best of it is that a certain amount of sympathy is being given the garage owners. Yet their complaint is not based on any different ground from that of the contention of the medical profession in its fight against lay usurpation and free distribution of the practice of medicine by tax supported hospitals and endowed institutions. Yet in its fight the medical profession has never had the faintest degree of support from the garage own-

ers' association, either as individuals or as an organized group.

The garage men, like men in all other lines of life, are not going to socialize their own business, but they are willing to socialize medicine just for the sake of getting a little more medical charity.

Medical charity! The whole profession has to be practically as generous as nature herself.

To begin with, there is probably a higher proportion of overhead in the medical than in any other profession. It is almost easier to square the circle than to work out the net average income of the 150,000 doctors in the United States. Authenticated figures that have been published set about three billions of dollars as the cost of medical care in the United States for 1927. This included hospital care, nursing service, drugs, all surgical and therapeutic supplies and also patent and proprietary medicines. On the liberal but undoubtedly too generous assumption that a billion and one-half went to the doctors, that would only be about twelve thousand dollars GROSS income for every doctor in the United States. One physician reported a deficit of \$2,600, but some few reported net incomes of about \$70,000, but did not claim this as from professional revenue only.

On as accurate an hypothesis as could be obtained, it can be stated emphatically that, while supplies for medical and surgical practice and costs of living have increased, medical incomes have not, for even one per cent. of the 150,000 physicians actively practicing medicine in the United States.

The doctor's economic status remains fairly secure, but there are states in which physicians have been compelled to accept contract practice, or some other form of payment for their services, in some sections amounting to contract practice. In some of the southern states whole communities have organized, with each family contributing one dollar fifty to two dollars per month for the payment of their medical service. Large industries in some states have forced physicians to form groups and administer both to the working men themselves and to attend any sick member of their employes' families. Contract prices are far below the average physi-

cian expects or requires, or is even equitably just in order to live comfortably.

In industrial centers as well as in other places where doctors receive stipulated salaries, there still exists a comparatively large population which is dependent upon charity. The doctor must take care of these cases without hope of compensation. Regardless of any law of reimbursement by a state or federal subsidy, there will still remain in all parts of the country this large clientele of charity patients. In Illinois alone, where there are approximately eleven thousand physicians practicing medicine, by a mathematical formula which the doctor readily understands, each doctor has a charge off of at least from twenty-five hundred to three thousand dollars as his per annum contribution to charity. Therefore, when we say that the doctors of Illinois are contributing from twenty-seven to thirty-five million dollars a year to the care of the indigents, the figure is small indeed. Critics may maintain that these activities must not be classified as charity, but rather as the doctor's contribution to the welfare of his community. No other profession, business or trade is either ready or willing to contribute thirty million dollars a year for charity sake. The quality of work a professional man does is his asset. To the degree that he does his work better, his asset becomes greater. This is not true of business because of the amount of a business man's hereditaments is his asset. Work which the doctor does is as much a part of himself as any of the material holdings in any other line of trade. Contributions of free medical service to society means the same to a physician as any material contribution made by other individuals in another profession.

What shoe industry in Illinois gives away thirty thousand yearly in free shoes alone, not alone thirty million?

THE EDUCATIONAL COMMITTEE OF THE ILLINOIS STATE MEDICAL SOCIETY HAS GONE FAR AND ACHIEVED MUCH

The educational committee has made hundreds of contacts that are invaluable in a campaign of educating the public to what medicine has

done and is doing to safeguard the health welfare of the public.

Few state medical societies enjoy and profit from contacts with lay organizations in the degree afforded the Illinois State Medical Society through its Educational Committee. That intelligent understanding existing between the medical profession of Illinois and these lay groups has been valuable to all concerned.

The Secretary of the Civic Federation of Chicago has given his support often to the Illinois State Medical Society and has offered suggestions as to how the public might be informed about pernicious legislation such as the Sheppard-Towner Act and its related bills.

The Public Health and Child Welfare Chairman of the Illinois Federation of Women's Clubs and the Illinois Congress of Parents and Teachers, representing about 200,000 women, confer with representatives of the Educational Committee. Some excellent work is being done by these two splendid groups of women. Particular mention might be made of the "Summer Round-Up" and the correction of remedial defects following physical examinations at that time. Hundreds of physicians have been invited to appear before women's clubs and Parent-Teacher Associations in order that the members may learn what medicine has accomplished and is doing to raise our health standards. The Illinois Federation of Women's Clubs supported the State Medical Society in opposing the Sheppard-Towner Act and opposing anti-vivisection legislation.

The University of Illinois Home Economics Extension Service has sought the advice and assistance of the Educational Committee in its work with the Home Bureaus and 4 H clubs. In a number of counties all Home Bureau Units have received some cooperation from the State Medical Society.

The Chicago Woman's Club, with its cancer program, the Chicago Section of the National Council of Jewish Women; the Chicago Woman's Aid; the Jewish People Institute, the Juvenile Detention Home sponsoring proper sex education; the American Public Health Association; the Illinois State Dental Society, and the Elks Foundation for Crippled Children should also be mentioned. The Evanston Woman's Club, through Mrs. Rufus Dawes, came recently to the Educational Committee for advice and coopera-

tion. There can be no question as to the value of these contacts which have helped so much in promoting an intelligent interest in important health problems of Illinois.

The Illinois State Department of Public Health enjoys friendly relationship with the State Medical Society. Its various divisions have sought and received cooperation from the Educational Committee. The members of the Committee and several obstetricians checked over and revised the prenatal letters now being sent out by the Child Hygiene Division. Numerous appointments have been filled for the Division of Public Health Education and that Division in turn has supplied posters, films, and literature to the Educational Committee. There seems to be much less conflict than in former years between the medical societies and the nurses sent out from the State Department of Health.

The Committee has been represented on the Advisory Council of the Child Hygiene Division of the State Department of Health. This Council has officially approved a plan for work which will require the cooperation of the county medical society, county dental society, and local lay groups. Several counties are considering the establishment of this plan within the near future.

The contacts which the medical society have had with grade schools, high schools, colleges, with Y. M. C. A., with the men's service clubs and with young mothers' clubs, have given individual members a new understanding of what the Illinois State Medical Society is trying to do. Practically every lay organization of any appreciable size or importance in Illinois has had contact with organized medicine. During Health Promotion Week, 1930, members of the Illinois State Medical Society presented health programs to over *two hundred* schools, clubs and churches.

THE DETROIT SESSION OF THE AMERICAN ASSOCIATION, JUNE 23, 27, 1930

The annual session of the American Medical Association is outstanding medical event of the year for a majority of the American medical profession. Physicians who have attended one of these annual sessions realized that the return on the investment is beyond that which may be obtained by investment in any other manner for self improvement.

Those who intend to attend the Detroit session will do well to make arrangements in advance. The first consideration is, of course, the matter of hotel accommodations.

DETROIT HOTELS

A list of Detroit hotels is presented for the benefit of those who expect to attend the annual session of the American Medical Association, June 23-27. Dr. William C. Lawrence is the chairman of the Subcommittee on Hotels of the Local Committee on Arrangements and may be addressed at 1805 Stroh Building, Detroit, Mich.

Name and Address	Single		Double	
	Without Bath	With Bath	Without Bath	With Bath
Barlum Cadillac Sq. and Bates St.	...	\$2.50-\$ 4.00	...	\$4.00-\$ 5.50
Book-Cadillac Washington Blvd. and Michigan Ave.	...	3.00- 10.00	...	5.00- 12.00
Briggs 114 W. Adams Ave.	...	3.00- 4.00	...	4.50- 7.00
Detroit-Leland Cass and Bagley Aves.	...	3.00- 5.00	...	5.00- 7.00
Fairbairn Columbia at John R. Sts.	\$1 50	2.50	\$2.50	3.50
Fort Shelby Lafayette and First Sts.	2.50	3.00- 7.00	3.50	4.00- 10.00
Fort Wayne Cass Ave and Temple St.	...	2.50- 3.50	...	3.50- 6.00
Grant 2931 John R. St.	...	2.00- 3.00	...	4.00- 5.00
Imperial Peterboro at Woodward Ave.	...	2.50- 3.50	...	4.00- 5.00
Madison-Lenox Madison Ave. at John R. St.	2.00	2.50- 3.50	3.00	3.50- 5.00
Norton Jefferson and Griswold	2.00	2.50- 3.00	3.50	4.50- 5.00
Norton-Palmer Windsor, Ontario, Canada.	2.00	2.75- 3.00	3.50	5.00
Palmetto Hancock and John R. St.	...	3.00	...	4.00
Prince Edward Windsor, Ont., Canada	...	3.00- 5.00	...	5.00- 10.00
Royal Palms 2305 Park Ave.	...	3.00- 4.00	...	4.50- 6.00
Seward 59 Seward Ave.	...	3.00- 3.50	...	4.50
Statler Washington Blvd. and Park Ave.	...	3.00- 8.00	...	5.00- 10.00
Stevenson 46 Davenport Ave.	...	2.50- 3.00	...	4.00- 5.00
Strathmore 70 W. Alexandrine	...	2.00- 3.00	...	3.00- 4.50
Tuller Park and Adams Aves.	...	2.50- 5.00	...	5.00- 7.00
Webster Hall 111 Putnam Ave.	2.00	2.50	...	3.50- 4.00

Wolverine 2.50- 4.00 ... 4.50- 7.00
Weterell and Elizabeth

RAILROAD TRANSPORTATION

The next matter of importance in connection with the trip, is that of railroad transportation.

The passenger associations throughout the United States have authorized a rate of one and one-half fare for the benefit of members and dependent members of their families who will attend the A. M. A. session at Detroit. To have the benefit of return rate of one-half fare it will be necessary for each member to secure a certificate from the railroad ticket agents when he purchases his ticket to Detroit. The certificate must be certified to by the secretary of the A. M. A., which may be done at the registration bureau to be located in the Recreation room of the Masonic Temple in Detroit, and must then be validated by a representative of the railroad who will be on duty June 23 to 27. When the certificate is so certified and validated, it will entitle its holder to purchase a return ticket to his home, over the same route traveled to Detroit at one-half fare.

The certificate is not a receipt for money paid for a ticket, nor will a receipt entitle its holder to secure a return trip ticket at a reduced rate. Be sure to ask the ticket agent for a certificate.

The dates of sale of tickets to the A. M. A. meeting at Detroit will be June 19-25, inclusive.

Certificates properly certified and validated will be honored for purchasing tickets for the return journey at one-half fare up to and including July 1.

Be sure to ask your railroad ticket agent for a certificate when purchasing your ticket to the A. M. A. meeting at Detroit.

THIRTEEN MILLION PROFIT OF THE MAYO CLINIC TO BE USED FOR THE ADVANCEMENT OF MEDICAL SCIENCE

Dr. William Mayo of Rochester, Minn., announced April 11 that the fortune, estimated at 13 million dollars, which he and his brother have amassed at their famous clinic will be used for the advancement of medical science. It will go to the Mayo Foundation for Medical Education and Research, he said, which already is training 300 surgical hands to carry on the work of its two sponsors.

THE JOHN PHILLIPS MEMORIAL PRIZE

The American College of Physicians announces the JOHN PHILLIPS MEMORIAL PRIZE of \$1,500, to be awarded for the most meritorious contribution in Internal Medicine and sciences contributing thereto, under the following conditions:

1. The contribution must be submitted in the form of a thesis or dissertation based upon published or unpublished original work.

2. It must be mailed to the Executive Secretary of the American College of Physicians on or before August 31, 1930.

3. The thesis or dissertation must be in the English language, in triplicate, in typewritten or printed form, and the work upon which it is based must have been done in whole or in part in the United States or Canada.

4. The recipient of the prize would be expected to read the essay at the next annual meeting of the college, after which he would be officially presented with the prize by the president.

5. The college reserves the right to make no award of the prize if a sufficient meritorious piece of work has not been received.

6. The announcement of the prize winner will be made not later than two months before the annual meeting.

AMERICAN COLLEGE OF PHYSICIANS

E. R. Loveland, Executive Secretary
133-135 S. 36th Street
Philadelphia, Pa.

DOCTORS WHO HAVE ACHIEVED FAME IN FIELDS OTHER THAN THE PRACTICE OF MEDICINE— DR. CHARLES B. REED, CHICAGO

To the average man, to say nothing of the majority of physicians, to be a recognized trail-blazer and authority in obstetrics, as well as a distinguished writer on medical topics would be "big game" enough for any man to bring down in his life time.

Such is not the case with Dr. Charles Bert Reed, president of the Chicago Medical Society. He has stalked big game and got his kill from the ice floes of Hudson's Bay to the Mexican jungles and mountain peaks. The mystic luring

coast of Oregon with its bays and sounds and the wild life of the bayous of the Father of Waters have known Dr. Reed's skill with gun and rod as well as with pen and camera. And the sick, the suffering, the desperately ill have known his skill and science in medicine and surgery.

"Doctor" Reed comes by his literary genius most explicably. As a matter of fact it may be said to have been born in him. His father, Hiram V. Reed, was a minister whose sermons as well as whose kindly counsels were decided factors in the upbuilding of the commonwealth and the consolations of weary souls and "doctor" himself was born in 1866 when the great war of the brothers of North and South had hardly let the soil grow cool for crops—and in the little town of Harvard, Ill.

His mother, the late Elizabeth V. Reed, was an international authority among Oriental societies. She was honored for her writings on Oriental literature. In fact she was one of the few women and one of the first Americans to be made a member of the British Royal Society of Orientalists.

Myrtle Reed McCullough was among the most popular of the novelists and fiction writers of the early years of this century. From her pen she made an immense fortune. The famous etcher, Earl H. Reed, noted for his work in the dunes, especially, is a brother.

In 1909, Dr. Reed with the late Dr. Charles G. Fuller and the late Emerson Hough, Edward C. Carter, Dr. W. M. Thompson, John T. McCutcheon and others formed the "Camp Fire Club of Chicago." This is an association of big game hunters. From 1911 to 1913 Dr. Reed was its president.

Much water had rolled under the bridges and many a lion, elk and bear brought to gun since the time when Dr. Reed, then only a lad of fifteen made his first camping excursion into the woods and found overwhelming pleasure in its revelations. His mind had been saturated in tales of pioneers and of mighty Nimrods of land, sea and frontiers. Not the least of his favorites among authors had been James Fenimore Cooper. Though ostensibly his travels have been the pursuit of big game the true urge in his heart has been genuine love for the wilderness. His wish was and is "Oh for a lodge in some vast wilder-

ness, some boundless contiguity of shade. . . ."

As his life expanded the family tendency to write grew stronger. In 1895 Dr. Reed produced the first of the long series of articles which brought him before the public. In the beginning the papers pertained especially to medicine. In 1898 appeared a "Quiz Manual of Histology," a subject he was teaching. Other medical topics to the number of forty-five demanded consideration. Influence of his forest contacts could not be denied so in 1907 he made a canoe trip to Hudson Bay. In 1910 the "First Great Canadian" appeared. In this book was assembled for the first time the scattered but slightly important adventures of Le Moyne d'Iberville, a Canadian voyager secondary only to La Salle in prominence. Material for this was found in "The Jesuit Relations" and among old manuscripts and pioneer narratives of Canada in the seventeenth century. In 1914 came the "Masters of the Wilderness," a study of the Hudson Bay Company. Following the footsteps of d'Iberville to Louisiana and Mobile brought the "Dream of Empire" and the "Beaver Club," afterward published in the same volume with the "Masters of the Wilderness." At this time also appeared "The Curse of Cahawba" which was a romantic history of the earliest capital of Alabama which had never before received attention.

During this period Dr. Reed's interest had not been distracted from his profession. Besides his regular contributions to the Journals and to the societies, his book "Obstetrics for Nurses," was published and soon became a standard text and is now in its third edition. In 1915 the life of "Albrecht von Haller" was issued. In 1922 a short but now widely applauded biography of "Dr. Clopton Havers," and the story of a dog named "Duke." Other papers such as *Toxemia* as a Stimulus in Literature. The Literary Value of Hunger; *Utopia* and *Life* and the Beautification of the Novice marked slow transition into wider fields.

Dr. Reed had visited Ontario for the first time in 1902. The wild and rugged beauty of Lake Superior's northern shore fascinated him. At the time the coast was wholly unsettled and the savagery of the untamed solitude brought the doctor back summer after summer. He wrote a number of short stories which his experiences

in this region suggested or inspired. These were finally collected in a volume and published (1924) as *The Four Way Lodge*.

Romance in all its forms was the only bait needed to entrap the doctor's emotions. In following out the origin of the Romantic Movement in Literature he discovered the source of Romance in the Courts of Love and the extensive Love Fury of the twelfth century. Careful examination of this material revealed so much novel and interesting information that this was also collected and became a new volume (1926) entitled "*Eleanor of Aquitaine*."

The doctor's travels have become more and more restricted in these latter years through the settling up of the country he visits and the gradual diminution of wild game. His estate in North Carolina takes a certain amount of his available time. However, he continues to write another book entitled "*Obstetrics Operations on the Manikin*," soon to be issued.

Dr. Reed got his academic work from the Chicago Public Schools and the University of Michigan. He did not finish at the University but returned to Chicago, and took his degree in medicine at Rush Medical College in 1887, at the age of 21. In 1893, married Clara Osborne, founder and director of the Columbia School of Music.

Dr. Reed's interest in his profession has always been deep and broad and ever alert to discover improvement in practice or technic. After some years in general work Dr. Reed took up obstetrics as a specialty. He is recognized as an authority. His work on "The induction of labor at term" though regarded as highly radical when it appeared has been accepted by the profession as a standardized procedure. Dr. Reed has been a member of the staffs of the German, Cook County and Wesley Hospitals, and Chief Obstetrician of Wesley for many years. He was assistant Professor of Obstetrics at Northwestern University Medical for a number of years and is now Associate Professor of Obstetrics there.

Dr. Reed is a member of the Chicago Medical Society; Illinois State Medical Society; the American Medical Association; the American College of Surgeons; the Chicago Society of Medical History; the Institute of Medicine and

the Chicago Gynecological Society of this last named he was president in 1909-10.

His varying interests have taken the doctor far afield, so that his club affiliations are few and rather specialized. He belongs to the Medical and Dental Arts Club, the Cliff Dwellers and the Chicago Literary Club of which he was president in 1914-15.

Dr. Reed was chosen president-elect in 1928 of the Chicago Medical Society, became its president this year.

A complimentary dinner was tendered Dr. Reed by the Chicago Gynecological and Chicago Medical Society, October, 1929.

All told, over three score and ten fiction stories, novels, medical books and articles have come from the fruitful brain of Dr. Reed. We have as candidates for future write-up the names of the following physicians who have achieved fame in fields other than medicine. They are:

George B. Lake, editor of *Clinical Medicine and Surgery*, North Chicago, Ill. William Barnes, Decatur, Ill. Lucius H. Zeuch, Carl Schneider, Richard S. Patillo and Louis J. Tint, all of Chicago. Do any of our readers know of additional names that should be added to the list?

JOB WAS OUR SUNDAY SCHOOL TEACHER'S MODEL OF PATIENCE, BUT JOB NEVER EDITED A MEDICAL JOURNAL!

The editor of the *Pennsylvania Medical Journal*, May issue, 1930, under the heading "The Unknown Things for Which the Editor Is Not Thanked" makes some timely comments upon the problem of getting out a medical journal. We quote:

"The unknown things for which the editor is not thanked far outnumber those that are known. In politics the good lawmaker or executive officer does the community as much, often far more, good by killing bad schemes in their inception, by preventing bad laws from being introduced or passed, by refusing to appoint corrupt or worthless subordinates, etc., as by the things, laws, or officials he positively establishes. In pure science or experimental medicine a negative experiment that is soon forgotten is frequently as important as the positive one that becomes woven into the truth that all recognize. Each is nec-

essary to establish a certainty. In a lay journal the labor concerning contributions refused and the "news" ignored takes up the larger portion of editorial time and energy. We believe we do not exaggerate when we say that by far the most of a medical editor's work never positively shows in his journal. The things for which you have most reason to be grateful are precisely those of which you can have no conception. It is, for example, a pleasure but none the less labor, to answer the number of inquirers a day who ask concerning matters not at all connected with the journal. We say it is a pleasure, because the information is difficult for the inquirer to give; and it is acknowledged that much of the satisfaction of life consists in doing little kindnesses.

"The grumblers and scolders have to be reckoned with also; they who write hastily, with prejudice, misinformation, and ill-will. Job was our Sunday-school teacher's model of patience, but Job never edited a medical journal.

It is also to be noted that the writer of a rejected article never forgives the poor editor, and some men are so constituted that they will "lay for that man" for many years. And yet, a journal can print only a definite number of articles, and a very large number, for this or many other reasons, must necessarily be returned. The return is no proof that the article has not decided merits, and one may write a kind personal letter in explanation, but the hurt, we fear, too often remains."

AUTOMOBILE MAY BE SAFELY DRIVEN BY THE PHYSICALLY DISABLED; ON THE OTHER HAND, A "HAIR TRIGGER" MENTALITY MAY BE A HANDICAP FOR SAFE AND SANE DRIVING

An interesting sidelight on contributing factors to public safety is announced through the psychological tests for automobile operators conducted at Ohio State University by Dr. Knight Dunlap of the department of psychology at Johns Hopkins University.

For these experiments revealed that a greater asset than intelligence in a driver is self-control. Excellent motor drivers may be made from men who cannot pass a simple intelligence test. Properly equipped cars may be handled by the disabled, with either a leg or an arm missing. On the other hand, a "hair-trigger" mentality

may be a handicap for safe and sane driving. Even the deaf can make good drivers. But a deaf pedestrian is in a bad way—very bad.

Common sense training in the manipulation of steering wheel, brake, and clutch, and a knowledge of and ability for gear shifting are demanded, according to Dunlap.

The man who can see but who won't watch is more of a menace than a man with impaired eyesight who keeps on the alert.

According to Dr. Dunlap, a color blind person can become a safe driver. Dr. Dunlap declares all persons are color-blind except when they look squarely at an object. Since an autoist usually observes a traffic signal out of the corner of his eye, because he has to watch pedestrians and other motorists at the same time, signals are designed on the assumption that all motorists are color-blind. Fortunately, there are two colors which a color-blind person can distinguish as well as a man with normal vision—orange-red and blue-green. Signal engineers are adopting these colors.

Ingenuous apparatus disclosed these and other facts about motorists in Dr. Dunlap's tests. In one test of eye, hand and foot coordination, subjects sat at the wheel of a dummy automobile. This had the steering mechanism, brake and clutch of a light car, and an electric seat that registered the "driver's" movements. Six feet in front, an illuminated chart represented a highway.

TEST ON IMAGINARY HIGHWAY

Along this imaginary highway the subject drove his car. One pointer on the chart showed the course of the test car. Another pointer represented an imaginary vehicle coming toward it. The driver was supposed to steer the test car so as to avoid an imaginary collision with the oncoming one. It was hard to dodge, for mechanism gyrated the approaching pointer as if a reckless driver were at the wheel.

A "noise barrage" was the means of testing a driver's lack of "emotional stability"—in other words, his tendency to fly off the handle or become confused by strange sights and noises. The subject sat in a padded chair, a pair of electrified handles in his hands. These carried a current far too mild to be felt, for the object was to detect the extremely delicate changes in the body itself. Suddenly bells clanged. Lights flashed

crazily. Buzzers whirled. A gun cracked, so close that the subject could smell the burning powder. Meanwhile a delicate galvanometer, an electric meter in the next room, measured the subject's ability to keep calm. Hardly anybody but truck drivers survived this test.

IN MEMORIAM

JOHN E. TUITE, M. D.

WHEREAS, It has been the will of the Divine Ruler of the Universe to take from his earthly toil our immediate past-president, John E. Tuite, and

WHEREAS, Although we respect the Will of our Creator, we bow in reverence to this great loss, and

WHEREAS, We wish to honor the memory of him who has had for many years uppermost in his thoughts, the best interests of organized medicine and those of the Illinois State Medical Society in general; therefore

Be It Resolved, That the House of Delegates do, in session this twenty-second day of May, 1930, spread on the Minutes of the transactions of this House of Delegates, this resolution, our evidence of respect to the memory of the deceased friend, John E. Tuite, a loss that earth cannot restore, and be it

Further Resolved, That a copy of this resolution be published in the ILLINOIS MEDICAL JOURNAL and a copy be sent to the family of the deceased, as a token of our esteem and an assurance of our sympathy.

IN MEMORIAM

DAVID B. PENNIMAN, M. D.

WHEREAS, We have recently lost through death a former Councilor of the Illinois State Medical Society, a man who has worked untiringly for many years for the best interests of the Society and the Medical Profession, and

WHEREAS, We realize that in the loss of our highly esteemed and beloved friend, the late David B. Penniman, the Society and the Council have offered a loss that cannot be replaced;

Therefore Be It Resolved, That the House of Delegates of the Illinois State Medical Society in regular session this twenty-second day of May, 1930, do cause to be spread on the transactions of this meeting this tribute in respect to

the memory of our late friend and co-worker, and

Be It Further Resolved, That a copy of this resolution be published in the ILLINOIS MEDICAL JOURNAL and a copy be sent to the family of the late David B. Penniman as our memorial tribute to his memory and our assurance of sympathy for a loss which earth cannot restore.

WOMEN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY HOLDS ANNUAL MEETING

The Fourth Annual Meeting of the Women's Auxiliary to the Illinois State Medical Society was held in Joliet, Illinois, May 21, at ten o'clock in the morning. The meeting was well attended by delegates from the organized counties and by those wishing to learn more about the work of the Auxiliary. State and Country Auxiliary officers gave very interesting reports which showed that definite activities were being sponsored, that the members were anxious to study the various problems relating to medicine, and that the Auxiliary has taken its place as a most worth-while and commendable organization in some communities. Those attending the meeting and not belonging to any County Auxiliary, no doubt found much inspiration and many ideas which will be used to develop Auxiliaries in their own counties.

Following the business session and election of officers, the Joliet Auxiliary entertained the visiting ladies at a very lovely luncheon at the Country Club. The President and President-Elect of the Illinois State Medical Society were among the guests. A short program was given, the retiring and newly elected officers were introduced and the meeting adjourned. During the afternoon a number of very beautiful dances were given on the lawn by girls from the Joliet High School and some delightful music was enjoyed by all those present.

Officers for the coming year are as follows:

President, Mrs. R. K. Packard, 6901 Paxton Avenue, Chicago; President-elect, Mrs. T. O. Freeman, 1204 Wabash Avenue, Mattoon; 1st Vice-President, Mrs. George W. Post, Jr., 1206 Ashland Avenue, River Forest; 2nd Vice-President, Mrs. E. M. Stevenson, 11 Hardwood Place, Bloomington; 3rd Vice-President, Mrs. E. R. Steen, 308 Sterling Avenue, Joliet; Treasurer,

Mrs. A. H. Brumback, 1503 West Jackson Boulevard, Chicago; Secretary, Mrs. Frank Maple, 6728 Paxton Avenue, Chicago; Assistant Secretary, Mrs. F. P. Hammond, 6020 Drexel Avenue, Chicago.

WOMEN'S AUXILIARY, A. M. A.

DETROIT MEETING

Monday, June 23, 1930

2:30 P. M. Meeting of the Board of Directors—Statler Hotel.

All state presidents and presidents-elect are asked to time their arrival and stay in Detroit so as to be able to attend the Pre-Convention and Post-Convention Board Meetings.

Tuesday, June 24

9:00 A. M. Registration. Auxiliary Headquarters—Hotel Tuller.

9:30 A. M. Business meeting.

Invocation.

Address of Welcome.

Response.

Report of Committee of Arrangements; Announcements.

Report of Entertainment Committee.

Adoption of Convention Rules.

Minutes of Seventh Annual Meeting.

Treasurer's Report.

Auditor's Report.

President's Report.

Committee Reports:

Finance. Presentation of the Budget.

Printing.

Organization.

Press and Publicity.

Hygeia.

Public Relations.

Legislation.

Program.

Revisions.

Historian.

New Business.

1:00 P. M. Luncheon, Hotel Tuller Roof Garden.

Speakers will be announced later.

Wednesday, June 25

9:00 A. M. Registration, Hotel Tuller.

10:00 A. M. A WORKERS' CONFERENCE.

The Purpose of the Auxiliary.

The National Program.

Analysis of the Work of State Auxiliaries on the Basis of the Official Program of the National Auxiliary. Conducted by Mrs. Evarts V. De Pew, assisted by all State Presidents.

This discussion is planned to be a workers' conference in the real sense of the word. The discussion will be interesting and exhilarating to any doctor's wife; but it should be especially valuable to state presidents, presidents-elect, and committee chairmen, and to the corresponding county officers.

Business Meeting Continued.

Unfinished Business.

New Business.

Report of Credentials Committee.

Report of Nominating Committee.

Election of Officers.

Introduction of New Officers.

Adjournment, sine die.

Thursday, June 26

Mrs. J. Newton Hunsberger presiding.

9:00 A. M. Post Convention Board Meeting.

All state presidents and presidents-elect should be at this meeting to assist the incoming president in planning the work of 1930-1931.

10:00 A. M. Round Table for State Presidents and Committee Chairmen.

Chief Purposes of the State Annual Meeting.

Adequate Preparation for the State Meeting.

Agenda for the State Meeting.

Duties of State Board Members—Especially of the President and Committee Chairmen.

AS THE GREAT WOULD SAY

"A good man is hard to find."—Demosthenes.

"I'm strong for you, kid."—Sampson.

"Tut, tut, I'd rather be a mummy."—King Tut.

"I'm all broken up."—Humpty Dumpty.

"Free lung, big boy."—Jonah.

"I ain't nobody's darling."—Cleopatra.

"On with the dance."—St. Vitus.

"The bigger they are the harder they fall."—David.

"Hot stuff, keep the home fires burning."—Nero.

"So this is Paris."—Helen of Troy.

"It floats."—Noah.

"The first hundred years are the hardest."—Methuselah.—*Pickup.*

A soap manufacturing company advertised a contest for slogans. They also made perfume. Here is a slogan that came in which they could not use. It read: "If you don't use our soap, for heaven's sake use our perfume."

Miscellany

THE DIURESIS OBTAINED BY EXTRACT OF POST-PITUITARY AND ITS MODIFICATION UNDER THE INFLUENCE OF SLEEP.—M. Labbé, P. L. Violic and E. Azerad (*Presse méd.*, No. 34, 1926).

Through experiments on patients, it was determined that the well-known diuretic effect of post-pituitary extract remained absent, when the injection was given before the patients fell asleep. As explanation, the fact must serve that in sleep a general vaso-dilation exists, by which the vasoconstrictor effect of the extract was neutralized.

INSULIN FOR THE SYMPTOMATIC TREATMENT OF ECLAMPSIA.—G. Miranda and G. Tesauro (*Riforma med.*, 42:977, 1926).

On the basis of their own observations and assertions in the medical literature, the authors assumed the appearance of acidosis, hyperglycemia and lacticidemia in eclampsia. This led them to treat eclampsia with insulin. They reported two cases, one of which was cured with insulin treatment. The injections of insulin led constantly to a permanent increase of the alkaline reserve with lowering and later disappearance of acidosis and lowering of lacticidemia. It never resulted in hypoglycemia.

Insulin therapy has only a symptomatic significance and should not supplant evacuation of the uterus.

ACTION OF DECIDUA TRANSPLANTATION ON THE MAMMARY GLANDS.—Madruzzo (*Riforma med.*, 42:111, 1926).

Decidua were transplanted into rabbits and guinea-pigs, which either were pregnant or had just given birth to young. The author always obtained hypertrophy of the mammae and secretion of milk, which persisted two months following the operative interference. Control experiments with placental villus resulted negatively. The histological examination brought forth that the secretory activity of the glandular portion of the mammae following the transplantation was in the duct. The author, therefore, considers the decidua as an organ with internal secretion.

Discussion: Gentili (Pisa) recalls that he caused the mammary gland to function actively by means of the injection of an active lipoid of the placenta.

DOES THE APPENDIX POSSESS AN INTERNAL SECRETORY FUNCTION?—F. Moutier and R. Fouché (*Presse méd.*, No. 34, 1926).

The authors maintain that they have observed changes following appendectomy which could permit them to conclude that a disturbance of internal secretion was present. Thus, 5 times postoperatively, obesity; then, hypertrophy of the thyroid and finally chronic constipation.

ON THE PLURIGLANDULAR GENESIS OF SEXUAL IMPULSE.—L. Quaranta (*Riforma med.*, 42:616, 1926).

The author mentions a case observed by him of

bilateral castration, in which an attack of tuberculosis (syphilis) in a man of 28 years, not only did not decrease the sexual impulse, but even increased it. As the above mentioned patient became impotent at 55 years, an adiposogenital symptom complex with gynecomastia set in. Without the assistance of the other glands (adrenals, pituitary), the normal sexual activity in this case could not be explained.

ON SEVERAL ORGAN TRANSPLANTATIONS. PRELIMINARY CONTRIBUTION.—L. A. Oliva (*Riforma med.*, 42:111, 1926).

Redner transplanted parts of placenta four times and complete ovaries nine times into bearers of inoperable cancer by means of preperitoneal and subaponeurotic methods. There resulted a decrease of pain and of foul smelling secretions; in four women, there was noted an unquestionable prolongation of life.

Likewise, with ovarian transplantation did the author obtain favorable results in young girls with genital infantilism and dysovarianism, in which there resulted an improvement of menorrhagia and amenorrhea and, in dysmenorrhea, an increase in volume of the ovary. The author will next try placental and ovarian surgery and organotherapy at the suggestion of Bignami (Cremona) for prophylactic and preoperative purpose.

THE EFFECT OF INSULIN WITH RESPECT TO DIURESIS.—A. Rossi and A. Sartorelli (*Riforma med.*, 42:19, 1926).

In the experiments, the authors studied the influence which insulin exerts on the secretion curve of the kidney, called forth by Volhard's method.

They came to the following conclusions:

(1) That insulin, with regard to the secretory activity of the kidneys, has first an effect of oliguria, then polyuria. The latter phenomenon preponderates over the former.

(2) That these effects probably originate in vasomotor phenomena of opposite nature, which were produced by insulin.

(3) That the difference in vasomotor phenomena is presumably to be traced back to the different amounts of hormone which circulate at the beginning and in the further course of the experiment.

NURSE IS INJURED WHEN HIT BY AUTO

Miss Mona Smith taken to Mercy Hospital; was struck in safety zone.

"How come you were born in Ireland?"

"Well, you see, I wanted to be near my mother."
—Anapolis Log.

CHICKEN SALAD

Customer: "Have you any good pork today?"

Butcher: "Good pork! Say, I've got some pork that will make better chicken salad than any lamb you can buy!"—Red Foz.

Original Articles

A FORWARD LOOK INTO MEDICAL PRACTICE*

F. O. FREDRICKSON, M. D.

CHICAGO

No man could have passed through the Presidency of the Illinois State Medical Society without having been impressed with the magnitude and diversity of organization work done by officers and members with no thought of any other recognition or compensation than the knowledge and satisfaction of having done something constructive in behalf of the medical profession. It is due to the devotion and ability of these men that the medical profession has resisted the inroads of the rapidly growing system of institutional practice and it will be the devotion and ability of these same men that will guarantee the future of medical practice. So with pride and gratitude I stand before you in the position of honor to which you have called me, even though its duties could have been as acceptably filled by others and placed upon my shoulders the responsibilities that had been brilliantly cared for by my predecessors. My only hope is that I have, in at least a small measure, added something constructive for the future of the medical profession.

I shall adhere to the usual custom of retiring presidents by limiting my address to some phase of medical organization, and shall attempt to look somewhat into the future of medicine. What the finality of medical practice will be is difficult to predict, if ever medical practice reaches that stage. Medical progress must continue. Each age of progress will have its problems just as does this present period.

Little need be said as to scientific advancement in medicine when we consider the ignorance of primitive medicine, a system of fetishism and superstition. Then Hippocrates came, describing and classifying disease, followed by Galen with experimental physiology. We remember the Romans and their achievements in sanitation. Following the decline and fall of Rome, filth and pestilence reigned—the worst of which was the Black Death. The years up

to 1800 were indeed the dark ages of medicine. In this age the medical practitioner had to contend with soothsayers, fakirs, and quacks. Many experiments and anatomical studies had to be done in secret and in fear of the gallows. The practice of medicine suffered oppression and persecution. Frederick II issued an edict requiring an examination based on the books of Hippocrates and Galen as a requisite to the practice of medicine. Then followed a period of scientific medicine. During this period medicine progressed by leaps and bounds, engendering attendant problems far-reaching and affecting the medical profession as a whole rather than sporadically touching the individual doctor.

As movements initiated in the past have led up to certain definite conditions in medical practice, so also movements being initiated in the present will lead to certain definite conditions in future medical practice. If the medical profession fails to institute measures to thwart tendencies toward a vicious system of medical control, and if these movements are permitted to continue, the results will be definitely inimical to the public and to medical science. Unless we as a united profession wake up to this fact, medical practice in the United States will be federally or industrially controlled as in Europe, both to the detriment of medical service and public welfare.

Large insurance corporations examine their applicants before they are accepted. Later policyholders are given free and periodic urinalyses. Recently these corporations offer policyholders free periodical physical examinations by members of the profession.

Another evil is contract practice in various industries, such as coal mines and factories. Doctors work faithfully for years at a compensation considered fairly good only to find some day a letter on their desks stating that their services are no longer needed unless they will accept a cut. Other physicians will fill their places at a lower figure.

Another condition that has developed is the full-time professorship in medical schools where all fees for surgery, treatment, and consultation are turned over to the institution. Strange as it may seem, as soon as one man resigns from such a position, there are several others ready to take his place and willing to sell themselves

*President's address, Eightieth Annual Meeting Illinois State Medical Society, Joliet, February 20-22, 1930.

and their profession for a mess of pottage. It is much to the credit of certain prominent men of the profession that, honored by such offers, they have rejected these opportunities for the reason that such a policy would lead eventually to the control of medical practice by the state or some analogous body. The placing of the clinical teacher in the same position as other university teachers is, I believe, inconsistent with good clinical teaching. A clinical teacher must necessarily practice medicine in order to teach satisfactorily. Any patient who is able to pay for services should pay the individual doctor, who is after all responsible to the patient. May we see the day when the practice of medicine will be placed on the same basis as the practice of law. Institutions should not practice medicine.

A new and dangerous force is making its influence felt. Time was when men of wealth left millions for endowment of art, libraries, schools, orphanages, or homes of the aged. Somehow this style of philanthropy is no longer the mode. There is a type of promoter who very benevolently, and for a lucrative compensation, seeks out and advises a man to place his excess wealth to the best advantage by creating large foundations with the idea of providing adequate scientific medical attention commensurate with the patients' ability to pay. Superficially this plan looks good. Analysis of what is being done in one hospital on that basis shows that the difference in the cost of care in that hospital and other hospitals is so small as to be negligible.

There is no doubt that the cost of sickness is high, but so is the cost of health! Fur coats, automobiles, radios and other healthy pleasures are being paid for daily. Nothing is laid aside for sickness. When it comes, the best is none too good, even though unnecessary, and though often the doctor is left unpaid. Illness is as much an element of mortal life as the natural desire for luxuries.

Too often the result of philanthropies is as follows: A large hospital is built. Nothing is said about requesting the architect, the contractors, or the builders to do their work gratis. Nothing is said about requesting the equipment houses to fully equip the hospital with all manner of appliances without getting some profit. When the hospital is completed, fully equipped and furnished, the help—nurses, office attend-

ants, and superintendents—all are paid. Yet at this stage the doctor is invited to step in and to care for the patients without any or with only a moderate fee. All this for the glory of philanthropists and their promoters. Let me say here that for every doctor who spurns such an offer ten more accept with alacrity.

There seems to be a great determination on the part of various industrial organizations, insurance corporations, and other quasi-philanthropic organizations, to control the prevention and treatment of disease. It is more profitable for an industry to have healthy workers. Also it is more profitable to insurance companies that their policyholders are healthy and have a long life expectancy.

Public movements initiated by large foundations are numerous. Organizers of these movements in a large percentage of cases are more interested in carrying out their ideas and plans to full fruition than they are in the welfare of the public, whether or not there is any need. Some of these plans are to create large institutions for the care of middle class patients without consideration of how the medical man shall be paid. They point with pride to some institution's successful operation. Especially one institution that has laid up a large surplus. Successful? Yes, from a financial standpoint, but not from a scientific standpoint, nor from the standpoint of proper and efficient care. How does this "success" rate with the human element?

There is another factor that influences these movements. The rapid progress of scientific medicine has made its practice exceedingly intricate as compared with the past. Modern medical science has brought about more and more the necessity for institutional care of patients because of availability of the numerous scientific necessities. This has led to diversities in type of practice by requiring experts in all lines. Just one more step and we will find institutions established and fully equipped with apparatus by lay people, managed by lay people, following which would be the engagement of doctors on a salary basis, with all fees going to the institution. The doctor is often compelled to care without fees for patients, who come to the hospital as charity but really do not belong in this class.

Now, then, institutions are not qualified scientifically nor legally to practice medicine, even though they attempt to do so. Let me call your attention to what has recently been accomplished in Colorado. The District Court and Supreme Court ruled that a corporation cannot legally practice dentistry. It seems that the same rule should apply to the practice of medicine—steps should be taken to bring this about. The right to practice medicine is an individual right and is certified to after a long course of study and examination passed before a state board of examiners. This makes the individual doctor and not the institution legally responsible to the patient. Personal relations between the doctor and his patient cannot be guaranteed by the institution.

There must be, to a large extent, individualism in medical practice, responsibility of the doctor for his patient. He is the only one to humanly understand, encourage, and advise the patient. Yet it is all too true that in most instances in the scheme of various health agencies and foundations the doctor is left out of consideration.

Incomes of medical men should be sufficient to enable them to take their place in society with confidence and self respect, and also to maintain the standards of living expected of them.

All these movements that are now being advanced, many of them already accomplished, must be looked upon as the opening scene of state medicine and should be vigorously resisted.

In the literature on this subject, all sorts of prophylactic measures have been and are being advanced. They are so numerous, so divergent and varying in purpose and plan as to be impractical, or if practical, are not accepted by the profession because of the personality back of them. Many writers are so conservative as to almost invite the oncoming lay dictation of medicine. Other writers spend much time lurching visionary invectives against those responsible for the trend of affairs medical, but do not bring forth one constructive idea. It is little wonder that chaos prevails in the matter of medical economics.

Out of the maelstrom of ideas something vital and constructive must be evolved.

Now as to the method of resistance. In the first place it will be necessary to lay down cer-

tain fundamental principles upon which to build a definite plan of action.

1. There must be a firm conviction among medical men that medical practice and medical affairs must be controlled and directed by the medical profession for the public welfare.

2. As quoted from René Descartes by Doctor Harry M. Hall, Wheeling, West Virginia, at a secretaries' conference in Chicago in 1929: "If ever the human race is raised to its highest practicable level intellectually, morally, and physically, the science of medicine will perform that service."

3. Only through organized and unified effort and understanding and harmonious cooperation can the medical profession hope for a guarantee and preservation of their fundamental rights and freedom of legitimate activity.

4. There must be a firm conviction in the mind of every medical man that the profession must be responsible for the future of medicine and that economics of medicine shall reach the same high standard as technical medicine. "The Lord helps those who help themselves."

5. The personal relationship between physician and patient must be maintained in order to give the public the best there is in medicine." Assuming that the foregoing principles are in the main correct, which I believe they are, then we have some basis on which to establish procedures not only to retard but to arrest the advance of these colossal movements determined to throttle the altruistic activities of the medical profession, and to retard the progress of medical science, thereby endangering the health welfare of the public.

Some men, accustomed to following the line of least resistance, would have us incline to the side of submission, stating this debacle is coming; we will have it, so why bother. Such an attitude should be untenable from a standpoint of Americanism. How can we betray the trust our forefathers in medicine have placed in us? The forefathers who fought so dauntlessly filth, pestilence, prejudice, superstition, quackery, and chicanery. There were men in medieval times who faced even execution in behalf of the public health. Submission would be reprehensible and degrading to the profession. It is not to be thought of.

We might adopt the plan of conciliation were

it not for the fact that to the aggressor belongs the conciliatory attitude. We can only consider that these great movements are exceedingly and menacingly aggressive. Should the medical profession adopt the above plan we might go smoothly along parallel lines, only temporarily delaying the final parting of the ways. Then there would result a clash from which it is doubtful the medical profession would come out the victor. It would be disconcerting to the profession, and devastating to the public welfare and to individual health.

How may the medical profession so conduct itself in its relation to all these magnitudinous organizations fostering their movements so as to maintain scientific honor and efficiency? Not by submission, not by conciliation, nor even by ruthlessness; but by cooperation, guidance, and *education*.

We have gone a long way toward cooperation with and guidance of the various organized health movements and their activities, and with no small amount of success. This procedure should continue wherever the profession's influence can enter favorably into the activities of the various groups interested in public welfare. Above all, we should incline to the side of education.

We have done much toward the education of the members of the medical profession in regard to the trend of medical affairs. Many in the profession are beginning to see that coming events in medical practice are casting their shadows before, and that the problems must be solved by the profession for the profession and the public. It cannot be expected that those interested in these health movements should have the future of the medical profession at heart unless it in some way profiteth them. Therefore, medical men should be kept constantly informed as to what is going on in the medical world. They should be encouraged to interest themselves in all phases of medical organization and economics. That the extension of this type of education to prospective practitioners is beginning to show results in this state is evidenced by the deep interest shown by internes in the various hospitals. This plan of education should be extended so as to include the entire country.

Another phase of education which thus far

has not been considered and should in some way be inaugurated is the education of the lay public as to the dangers of institutional, corporate and governmental practice of medicine. The time is now ripe. Let us refer to a brilliant scholar and educator, Glenn Frank, a layman who in his address at the annual meeting of the American College of Surgeons warned the profession of the danger of these movements not only to the medical profession but also to the public. He stated that all about us were numerous evidences of the medical profession losing control of medical affairs. He was firmly convinced that should this occur it would lead to a deplorable state of affairs and be a detriment to the progress of medicine. Let me refer you to the prediction of Frank D. Loomis, Secretary of the Chicago Community Trust, in his address before the recent joint meeting of the Illinois, Indiana and Wisconsin Hospital Association. He predicted hospitals would charge one fee to cover everything, including medical service, the hospital, the doctor. Some organized plan should be formulated to acquaint the lay public with this trend in medical affairs. How this could be done I do not know, but if it is given sufficient thought by the profession someone with the genius of Moses might lead the public out of darkness to light.

The public should be informed as to what has occurred in Europe with their "Compulsory Health Insurance" and "Panel Systems" and what these system are responsible for bringing about.

The public should be convincingly shown that institutional practice of medicine as well as state medicine would "1. stifle medical initiative and medical research, 2. retard medical progress, 3. discourage the study of medicine by ambitious students, 4. encourage perfunctory, inferior, and inadequate service from indifferent doctors, 5. develop neurotics and malingerers, 6. take away the right of people to select their own doctors, 7. and eventually lead to public dissatisfaction."

In conclusion, let me emphasize the fact that no one, be it an individual or group of individuals, will be as interested in the progress of medicine or the welfare of the medical man and his patient as is the medical profession itself. Should this movement for institutional medicine or state medicine go on to its ultimate consum-

mation, the patients who enter these institutions will be known not by name, but my number and regarded as so much human flesh. All personal and sympathetic contact between doctor and patient will be lost. The individuality of the doctor and patient will be completely crushed, and the spirit of the science of healing be lost.

However, I have great hope that the medical man with his old-time indomitable perseverance, integrity, honor, and full belief in right will realize that the problem is his. And so he will bring it to pass that these movements will be guided by the medical profession and like quiet streams converge gradually until at the meeting of the waters the efforts of all concerned will be mingled in peaceful and mutual endeavor to succor the needy sick, to encourage, resolutely, self respect among those of sufficient means by refusing any plan of pauperization, and to maintain the dignity of the profession on the same high plane it has always enjoyed, freedom of legitimate activity among the profession, equality of opportunity, and the recognition of the fundamental rights of the profession.

ECONOMICS*

LEROY PHILIP KUHN, M. D., F. A. C. S.

CHICAGO

It is with trepidation and no small estimate of responsibility that I assume the duties of President of this society for the ensuing year. I have served as Vice-President and have been a member of the Board of Governors every year following the first since the organization. I hope the honor you bestow upon me to continue serving and if possible carry on will not be misplaced; but rather, my aim will be to assist and lead the society on to greater efforts. I was a member of a committee to write the by-laws and constitution. Naturally the success of the society is near and dear to me. Some of us have been specializing in traumatic surgery since 1911, about the time of the beginning of workmen's compensation laws. Others have done industrial surgery in the large manufacturing plants for a longer period. During this time we have had many problems with our colleagues

as well as medical organizations. Not until our Industrial Surgical Society was perfected about 1920 did we receive proper recognition.

The subject of medical economics leads into diverse channels where one may easily digress, or suddenly be called into controversy with those who have time to be interested, but know nothing of the concrete facts. History portrays some startling knowledge of the high standards adopted by the primitive people, which the 19th and 20th centuries have not entirely followed.

We learn from the Code of Hammurabi, 2250 B. C., that the medical profession in Babylon had advanced far enough in public esteem to be rewarded with adequate fees, carefully prescribed by law. Thus ten shekels in silver was the statutory fee for treating a wound or opening an abscess with a bronze lancet, if the patient happened to be a gentleman. If he were a poor man or a servant, the fee was five shekels. If a physician set a broken bone for a man or cured his diseased bowels, the patient gave five shekels. If he be a freeman, he shall give three shekels. If he be a man's slave, the owner of the slave shall give two shekels. Ten shekels at that time was about the yearly wage of an ordinary working man.

Prior to about 600 B. C., the early Grecian physicians received presents for their work, but the physician had something to say about the value of the present. The medical profession is found to be more highly specialized as we approach the age of Pericles among the Ionian Greeks. General practitioners began toward the latter part of the period to receive stipulated fees for their services instead of the usual thank offerings of the temples, and, further, city and district (public) physicians were appointed at an annual salary which for the time given, was high. Regular dispensary attendants received from \$300 to \$400 a year at a time when this was four or five times as much as the yearly wage of the working man. Special fees of higher value are on record; thus, Cleombrotus received 100 attic talents for the successful treatment of Antichus I. This would be equal to over \$100,000 in our money. Democedes at Athens was on a yearly salary as city physician of \$2,000, a time when money was worth four or five times its present value.

*President's Address, Chicago Society Industrial Medicine and Surgery.

In the classic period, 460 B. C. to 130 A. D., fees were regulated according to the wealth of the patient. The maximum seems to have been as high as \$100 per visit while the minimum was a drachma—about 20 cents. Twenty cents at that time was the equivalent of eighty or ninety cents in our times. Many of the physicians received absolutely nothing for their services.

Large fees are on record. Thus Galen (131-201 A. D.), for the successful treatment of the Consul Boethius' wife, received the equivalent of \$2,000 in our time. The wife was sick about one month. Many of our physicians made large sums, living in luxury. Two brothers, sons of Heraclitus of Cos, were physicians to Claudius and Nero. They drew salaries of 500,000 sesterces (\$25,000) but they assured the emperor that they took the position to please him since their town practice yielded 100,000 sesterces more. They donated to many institutions and public funds and at their death left an estate of 30,000 sestertii (\$1,500,000).

The elder Pliny tells us of two distinguished court physicians, Stertini by name, whose professional income was established at nearly the equivalent of \$25,000 a year.

Gabriel Batischua, a favorite of Hanunul-Rashid, received about \$1500 per annum "for bleeding and purging the commander of the Faithful," besides a regular monthly salary of about \$2500 and a new year's purse of \$6250. He estimated his total fortune in fees at \$10,000,000 and on being recalled from banishment to heal Al-Meinamun, he received \$125,000, which Withington regards as the largest fee on record.

Abu-Nasr, according to the same authority, received more than \$50,000 for curing one of the Caliphs of a stone in the bladder. The Caliphs themselves were loyal supporters of science and were instrumental in founding hospitals, libraries and schools.

A hospital was founded at Damascus as early as 707 A. D., one at Cairo 874 A. D., two in Bagdad, 918. The great Al-Masur hospital at Cairo 1283 A. D. was a huge quadrangular structure with fountains playing in the four courtyards, separate wards for important diseases, wards for women and convalescents, lecture rooms, an extensive library, out patient

clinics, diet kitchens, an orphan asylum and a chapel. It employed male and female nurses, had an income of about \$100,000 and disbursed a suitable sum to each convalescent on his departure, so that he might not have to go to work too soon after illness. The patients were nourished upon a rich and attractive diet, and the sleepless were provided with soft music or, as in the Arabian Nights, with accomplished tellers of tales.

Hippocrates was a great student of medicine, lifting the profession out of empiricism and superstition, leading on to unbiased observation. The sick patient was persistently studied from a viewpoint of the morbid process. His doctrine of the four humors—blood, phlegm, yellow bile and black bile not properly mixing, the cause of all sickness might even today be given more thought. He passed on after a life of over 100 years, leaving us many examples to emulate. Physicians in those medieval years could give excellent accounts of diseases, but did not find the actual etiology except to leave theories such as the humoral theory left by Hippocrates.

About the middle of the last century Pasteur changed the perspective of medicine from Egyptian darkness by sending his famous paper on Lactic Acid Fermentation to the Lille Scientific Society. Later years found Pasteur working on the germ theory from which in the year 1881 we find the distinguished Frenchman dividing honors with Virchow at a meeting of the International Congress. What Louis Pasteur was to medicine in the early years, Joseph Lister was to surgery. The struggles of both will go down to posterity among those of the greatest benefactors of humanity.

Christian Fenger, John B. Murphy, Nicholas Senn, A. J. Ochsner, were all devoted, as were Pasteur, Harvey, Galen and Hippocrates to the scientific advancement of medicine and surgery as it had to do with disease. Little did the economics of medicine enter their field of thinking. They did see to it, however, that when a patient could pay a good fee he was required to do so.

I cannot agree with many writing on medical economics that we are facing a crisis today. Neither do I agree with those who state that laymen are trying to usurp our rightful duties

in managing our hospitals and other institutions for the sick. It is true that if you go into any large hospital today, you will find a lay board in control; but that is as it always has been. The average physician is no business man. His work consists of the treatment of the sick and the injured. The church, the state and laymen's organizations control finance and build most of our hospitals.

From a study of medical men of this country, we find that medicine alone has never produced a fortune. Few doctors ever become financially independent through the practice of medicine. The United States has prospered wonderfully during the past ten years. How many medical fortunes have been made in this time?

Dr. Horace Dunn of Rockford advises that the average physician throughout the United States today does not have as large an income as the average owner of a plumber's shop, in spite of long hours, responsibility and his investment in an education. If those who are proclaiming from the mountain tops the necessity of finding a way to reduce the high cost of doctors' services will just remember that a plumber in the home costs as much money as a doctor for the sick child, I believe they will soon look for new fields to conquer in economics.

Coming on down to the last fifteen years in the field of industrial medicine and surgery, we have medical men of national prominence, e. g., Drs. Moorehead, Schereschewsky, Magnuson, Fisk, Wheeler, Harvey, Hopkins, Otto Geier, MacLeod, Mock, Hart Fisher, Cloyd, Cheney and many other traumatic surgeons who have been in the field a long time. These men were pioneers, but they had a vision of possibilities far beyond the present opportunity in this special work.

Following the trail blazed by these noble traumatic surgeons during the earlier years, we have the organization of the Chicago Society of Industrial Medicine and Surgery in 1920. Through its persistent efforts have come improved economic conditions among industrial surgeons, unison of thought, development of better trained doctors in this field, with more recognition and influence with our associates. One of the refreshing rays of sunlight in our progress has been the organization of a traumatic section in

the American College of Surgeons. This brings to the door of the injured employe the best talent to be obtained instead of one not so skilled in traumatic surgery.

It is necessary for us to be united. We cannot progress on a divided basis. We need assistance from our great men in medicine and surgery, as ours is not an easy path to follow at times. We need leveling up, not leveling down. This leveling process must go on until each traumatic surgeon knows how to meet economic situations without grinding the face of his competitor. By the combined efforts of this organization, we are in a position to advance ideas in our field to the parent society, which cannot help but be constructive.

I am not entirely reconciled to the fact that certain large hospitals are doing traumatic surgery. These institutions are actually competitors with doctors in the vicinity. They do not have any one on the staff assigned to superintend this work, but rather assign it to internes unless a serious case happens to enter the hospital, when, of course, the surgical chief is called. This twenty-four hour service practiced by the hospital makes it difficult for the industrial surgeons in that neighborhood.

Before workmen's compensation laws, a limited number of doctors were doing traumatic surgery. Since the enactment of these compensation acts all over the United States, there have developed, especially in manufacturing centers, many traumatic specialists, with well equipped offices, who give the injured workman the best surgical attention. There has been a great demand for traumatic surgeons who were capable of understanding how three parties interested in the progress of the injured employee were to be advised.

The doctor who still believes only the one suffering from injury is to be considered cannot fit into the situation. Compensation laws place the responsibility on the employer to take care of his injured employee. The employer, not wishing to carry the entire load, shifts to an insurance carrier by paying a premium each year. Naturally the insurance carrier becomes one of the important three interested parties because the carrier has all the financial burden. Now when the injury is serious and permanent

disability is likely, the insurance carrier needs good surgical attention to the injured employee, and, of course, the patient profits by having the service of a trained traumatic surgeon rather than those of his family physician, who may be an expert obstetrician having little, if any, knowledge of fractures or infections.

The doctor in general medicine or surgery or any of the specialties infers that the traumatic surgeon takes his patients at the time of injury. They forget that traumatic surgery is a specialty the same as eye, ear, nervous diseases or obstetrics. We only treat the injured employee for the physical disability which arose out of and in the course of his employment. That is all the traumatic surgeon is interested in, because the patient was referred to the doctor for injury sustained while in employment. As I have seen this problem over a period of seventeen years, I am of the opinion it is on a fairly equal working basis. Those of us who have specialized in traumatic surgery and one or two occupational diseases (plumbism and silica) have left entirely the field of medicine and all other specialties to those interested in them. I wish the reverse were true. Hardly a month goes by but what traumatic surgeons are asked to give over to the family physician some injured person whom we know at the time will not receive the special care he would receive by remaining where first assigned.

Only a short time ago a severe third and fourth degree burn case came into the hospital assigned to my service. Immediate attention was given this seriously injured employee, special nurse and private room being provided by the insurance carrier. Nothing was left undone in the modern treatment of the severe burns. I rendered an unfavorable prognosis to the employer and family, as well as to the insurance carrier. That night the family physician arrived while I was making a late call at the hospital. Ignoring the doctor in charge and advising the family the patient would certainly recover, this family physician called an ambulance and, against my admonitions not to remove the patient, removed him to another hospital where his own treatment was instigated. The patient died the next day. Had the family physician treated a number of these severe burn cases, I am sure he would have recognized the gravity

of the situation and suggested to the family that he would join in the treatment, but would not assume responsibility.

Many patients are taken away from traumatic surgeons by family physicians. Can the reverse be true? Then why and by what ethical principle does the family doctor conclude he should assume charge of a specialty not within his field? Moreover, many states have written in their compensation laws the necessity of traumatic surgeons caring for injured employees. This is an economic situation brought about by legislatures because they fully realize the high cost to employer, insurance carriers and the extent of permanent disability if the injured employee does not have the best that can be given in the way of hospital and surgical attention. After all said and done, there is enough for us all to do without infringement.

Accidents not coming under the provisions of the workmen's compensation laws are known as public liability cases. Here the economic situation as far as the doctor and hospital bills are concerned is deplorable. The same situation exists financially as before workmen's compensation in that there is no provision made for payment of medical or hospital attention of the injured party until the settlement is made. If the patient demands a huge sum, the case goes into court for three or five years. The doctor may pass on into the other world and the injured party sojourn in Mexico.

There is no reason for this obsolete method of doing business, unless it is for the purpose of the public liability carrier finding a way to save on the settlement of the case. We have automobile insurance policies to cover accidents. But we do not see to it bills are paid. Only about 40% of public conveyances carry liability insurance. The remaining 60% either run away from the accident or run away from the bill when presented for payment.

My experience with a large number of these cases (coming up through a small hospital) located in a thickly settled foreign district is that when we force the issue of paying bills, they are paid. The hospital that allows a public liability accident case to remain after first aid treatment has been given, does so at its own risk. If insurance is carried by the one causing the accident or liable in any way, then the patient

might remain, especially if it is agreed between the parties concerned that the doctor and hospital bills will be properly adjusted. Otherwise the patient should be referred to the County Hospital. Not many of these cases should ever get into a charitable institution, because the one causing the accident should take care of the expenses incurred until recovery.

The Commission to study State and County Aid to general hospitals in New Jersey reports nineteen hospitals whose highway accident cases were studied in detail, showing 1781 patients with 22,440 hospital days. Of the total hospital bill of \$106,000, the hospitals have been able to collect only 56%—\$46,850 remaining unpaid; and the majority of the hospitals report that they do not expect to recover even a small portion of that amount.

To meet the situation arising out of the growing number of highway accident cases, several states have introduced compulsory automobile liability insurance features in their laws and a number of states have appointed legislative commissions to find remedies for the situation through some form of compulsory insurance.

I have never been an advocate of compulsory automobile insurance, but when you have, as I have had during the past five years, case after case seriously injured with neither party having funds available, then I think you will agree, as I am beginning to, with the Massachusetts compulsory automobile law, that everyone driving a car should register an insurance policy when the license is annually obtained. An automobile driven by one who is not entirely at peace with the world or by a boy 15 or 17 who is naturally reckless, in a thickly populated district, where children use the street for a playground, is about as dangerous as dynamite in the hands of the insane. Either keep this type away from automobiles by refusing them license, or compel them to carry heavy liability insurance on the car driven. Then the injured do not have to depend on charity while under doctor and hospital treatment. Of course, the attorney demanding huge sums for settlement in these cases has to be controlled else the whole good from the insurance liability is lost. Any court allowing settlement on these cases without seeing to it that a separate check is made for medical

attention given, does not fulfill the obligation of proper justice. The money should not be given to the injured party or the attorney to settle medical bills, as neither can be trusted. Both parties always attempt to force down these bills until there is nothing left. If the medical or hospital accounts are disputed, they may be very easily adjusted by the court so that all bills can be paid at the time settlement is made.

Medical testimony given before industrial commissions and in trial courts should be governed by a better understanding with the attorney trying the case. Quite true we have physicians who spend so much time testifying in our industrial commission they have little, if any, time left to practice medicine. It is marvelous the way some of the doctors can interpret x-ray films; also the magnificent display of testimony they can give about loss of function when asked to estimate the physical possibilities or describe the objective findings of an injured hand or foot. I am not so sure but what the plan of having an impartial doctor interpret medical testimony on every case submitted for arbitration in our industrial commissions, and in higher courts, is the only way we can ever overcome some of the ludicrous testimony given which is not in line with actual scientific findings.

A recent experience in the circuit court, where a judgment for \$1375 was obtained on a bill of \$2000, might serve as a good illustration. We found it necessary to show in the trial of this case that the professional services rendered could not be valued according to the size of the verdict obtained from the taxicab company or amount of money collected, but rather on account of the skill required to perform the several decompression operations, the experience and ability of the surgeon, the subsequent treatment required and what would be a fair and reasonable charge for such services.

The trial of this case required most all of a week. First the jury was discharged because we attempted to show the patient had been allowed \$50,000 by a court for injuries sustained when he was run down by a taxicab. A compromise settlement was made wherein the injured party received \$27,500 cash from the taxicab company. I had done two decompression operations upon this patient and treated him throughout

his illness to recovery over a period of three months. We were not allowed to show the financial standing of the patient or the amount received in settlement with the taxicab company. After the testimony of four surgeons about the reasonable bill submitted and our case was completed, the attorney for the defendant attempted to show that the fee was exorbitant and unjust. The case went to twelve men a little above the average in intelligence. Three of them argued that a fee of from \$200 to \$500 was sufficient, four that I should have the full amount of the bill. The remaining five were more or less undecided. Finally a conclusion of \$1,375.00 was reached by the jury. I was advised later that had the jury known the defendant in the case received \$27,500 from the taxicab company, they would have allowed \$2,000, because we had shown the bill was fair and reasonable.

SUMMARY

1. Ancient medical history shows that physicians in the early days were far better compensated for their services than is the present day practitioner. The great men of the last century who have done much for the scientific advancement of medicine and surgery did little thinking regarding the economics of medicine.

2. Regardless of much discussion about finding a way to reduce the high cost of doctors' services, it is a fact that the average physician of today does not have as large an income as the average owner of a plumbing shop, irrespective of long hours and investment in medical education.

3. Since the organization of the Chicago Society of Industrial Medicine and Surgery, traumatic surgeons have received more recognition and economic conditions have improved.

4. Some provision should be made in public liability cases, which do not come under workmen's compensation laws, for payment of hospital and doctor bills of the injured immediately, without having to wait for settlement of the case, which may take from three to five years, if it goes into court.

5. Medical testimony given before industrial commissions and in trial courts should be heard by an impartial physician who knows how to interpret the findings to the court.

DISCUSSION

Dr. Edward H. Ochsner: The address by Dr.

Kuhn, the President of the Industrial Society of Physicians and Surgeons, to which we have listened seems to me to be very timely. I do not know of any subject in medicine that is more vital to the medical profession or to the country at large than the problem of medical economics.

I was particularly interested in the first part of the paper. I have always felt very grateful to have lived in this age and generation until after listening to what our forefathers in medicine received in fees. Now, I am not so sure of my good fortune. When Dr. Kuhn mentioned a fee of \$50,000 I pinched myself to see whether I was awake or having a pleasant dream, and when he mentioned \$125,000 I pinched myself twice. If some of our philanthropically disposed financiers should feel inclined to emulate that practice I would suggest that they begin with fees of from \$5,000 to \$10,000. I am confident that if any American physician or surgeon were tendered a fee of \$125,000, he would probably die from heart failure.

Dr. Kuhn has covered many subjects, as is proper in a presidential address, but I am going to devote my time to just one subject and I am going to approach it as I would approach the problem of a patient coming to me for an examination for the first time. I would first consider the etiology, then the symptoms and then I would try to make a diagnosis. Next I would try to outline the treatment and finally I would try, at least in my own mind, to figure out the prognosis.

I think the etiology of this problem is very plain. It is misunderstanding, human cussedness and human selfishness. Dr. Kuhn has mentioned the old theory of disease of Hippocrates — blood, phlegm, yellow bile and black bile. The particular condition I am going to discuss sometimes generates much bile and other times spleen, and I have heard of occasions where it also brought blood.

The diagnosis is easy. It is recurrent, repeated controversies between the non-industrial surgeon on the one side and the industrial surgeon and the insurance carrier on the other side with the patient usually the goat. Dr. Kuhn has called attention to a number of cases where the non-industrial surgeon was seriously at fault. We all make mistakes. My observation has been that in these recurrent controversies the industrial surgeons and the non-industrial surgeons taken as a whole are probably about equally at fault. The insurance carrier is very often to blame—in fact, more often to blame than any others concerned for any trouble or friction that may arise. The employer usually is not much to blame because he is more or less of an outside party. The patient himself sometimes starts the trouble.

I am going to give a few illustrations where the Insurance Company was seriously at fault, and I am going to suggest some remedies which I believe would prevent most of the misunderstanding and friction. Some ten years ago a young man

came to me with two of the extensor tendons of his fingers severed opposite the carpus. He gave the history that he had been sent to the insurance doctor immediately after the injury and that the latter had spent at least half an hour probing around trying to find the tendons by poking the tissue forceps down in the direction distal to the skin lesion. Anyone with any sense at all, even a junior student, knows or ought to know that when a tendon is cut it is the proximal end that retracts and not the distal end. The doctor spent at least half an hour without either a local or general anesthetic trying to find the cut tendon distal to the wound. The patient now became dissatisfied with the treatment and came to me. I gave him a general anesthetic, sutured the tendons and in spite of the previous irritation secured prompt healing of the severed tendons in a very short time. I made a charge of \$50.00. I sent the bill to the patient who presented it to the insurance company for payment. The representative of the insurance company said some very unkind and uncalled for things about me. Of course he had the law on his side but I had the right on my side. I employed an attorney who went before the Industrial Commission and shamed the insurance company into paying the bill. Instead of making derogatory remarks that insurance company should have been decent and sent me a nice letter thanking me for taking care of the patient so efficiently and sending him such a reasonable bill and enclosed a check for the amount in full.

As I said before the cure of a disease is very simple. The only question is whether the patient will take the medicine or not and the medicine is nothing other than the Golden Rule. If the non-industrial surgeon, the industrial surgeon and the insurance carrier would practice the Golden Rule these difficulties would be eliminated. I hope you all know the Golden Rule—"Do Unto Others as You Would Have Others Do Unto You." Or if you prefer the rule laid down by the great Hebrew scholar, Hillel,—"Do not Unto Thy Neighbor that which is Hateful Unto Thee," the result would be the same.

My observation has been that the majority of industrial insurance companies are decent, honorable and do the right thing, but here we encounter exactly the same difficulty that we have to deal with in the practice of medicine. There are a few unscrupulous men in the practice of medicine just as there are a few crooked industrial insurance companies and they are the ones that are making most of the trouble for you and for me and other insurance companies because they under bid the decent insurance companies and resort to all sorts of trickery and try constantly to do the employers and the medical men as well as the injured employee. My solution of the problem is the following—Employers should refuse to insure in these cheap insurance companies. The insurance com-

panies that under bid their reliable, reputable, decent competitors, the insurance companies that think only of their profits, do the injured employee whenever they can find a legal loophole, and hire incompetent medical men to do the work. The reputable industrial insurance companies should do all in their power to help the employers and the medical profession to eliminate unfair insurance companies. If this can not be done the State Insurance Department should cancel the charter of unfair insurance companies.

If an injured employee is in the care of his own family physician who is thoroughly competent and who renders reasonable bills, the insurance company should not insist on the case being turned over to their own surgeon against the patient's wishes. I have never been an industrial surgeon under contract but a number of high class insurance companies have left their patients in my care if the patient came to me in the first instance and insisted on having me as their surgeon. I have always sent such insurance companies reasonable bills such as I would have sent to the patient had he been a non-industrial case and received my fee promptly. It is usually only the "cheap-skate" insurance companies who employ cheap unscrupulous doctors and still cheaper lawyers with whom I have had any trouble at all. Industrial surgeons should refuse to serve those insurance companies that will not play the game fair with all concerned. On the other hand non-industrial surgeons should cooperate with industrial surgeons in every way when the industrial surgeon is doing the right thing by the injured employee even though that employee and his family may have been regular patients of the non-industrial surgeon. Unless the unscrupulous insurance companies can somehow be put out of business, I am firmly convinced that the law will be changed so that the employee can employ his own physicians. If one hundred non-industrial surgeons of the state of Illinois would combine with laboring interests of this state and would go before the next legislature and report one hundred cases such as the two I reported above, I am sure the law would be changed at the next session. It behooves both sides to play the game fair or somebody is going to get hurt.

History always repeats itself. For many years quite a number of the railway systems were run by Wall street for the benefit of Wall street instead of by railway men for the benefit of the general public. As a result forty-eight states and the federal government each created railroad commissions and the roads have had a hard time of it ever since. All of this trouble they could have avoided if they had played the game fair when they had their chance. And the same thing will surely happen with the industrial insurance companies of this country unless they play the game as nearly fair as it can be played. If industrial surgery is to be directed by insurance companies for the benefit of

insurance companies instead of by medical men for the benefit of the public, the public will surely suffer and sooner or later the insurance companies will come to grief just as the railways did.

As I said at the outset of my remarks economics is one of the biggest problems in medicine today. Unless the average medical man receives reasonable recompense for his services medical progress will stop and the medical services rendered to the public will gradually deteriorate. It is your business and my business to do everything in our power to prevent such a calamity from befalling the American people.

Dr. William C. Nordholz: You have all heard Dr. Kuhn's paper and I do not believe there is any room for discussion. Dr. Ochsner touched on a subject that comes pretty close to the men in industry. He, being a surgeon in general practice, refers to some cases in which a few insurance companies have played unfair. We all know what the man in general surgery has to contend with, for we in industrial surgery are affected far more than Dr. Ochsner knows. We have three or four unscrupulous insurance companies in this city. Unfortunately one of them is rather a big institution. But how to overcome this obstacle is just what we would like to know.

Dr. Kuhn mentions the training that is required as a traumatic or industrial surgeon. Unfortunately those in general practice of medicine do not want to admit such a thing. They feel that every man who has received a degree of Doctor of Medicine is competent to take care of injuries, infections, fractures and what-not. If Dr. Ochsner could see what some of us have to contend with who have been in industry as long as many of us have, some of the work that is done by the general practitioner and compare it with the results that have been accomplished by the industrial surgeon, he would start to realize that industrial medicine and surgery is a definite specialty.

Now with reference to his tendon case, that such an instance took place is no doubt true, but I believe that we in industry, could show Dr. Ochsner many cases where the position is reversed. I mean the great number of cases where men in general practice have either overlooked severed tendons, fractures and what-not and have taken a positive position and refused to even admit where they were wrong. Now let me give you a concrete example. A young chap was sent to me who had been thrown from a motorcycle, receiving a definite comminuted fracture of the scapula; it was not easily determined by one anterior, posterior view of the radiograph, five to six different views as well as a stereo being necessary before the definite pathology was discovered. The fracture was re-

duced and the parts were immobilized and lo and behold two days later his mother took him to their family physician, who in turn took him to one of those \$2.00 x-ray laboratories which procured one anterior-posterior view and the family physician received a negative report. Without consulting me the supports were removed and the patient was instructed to use his arm. One week elapsed before we were able to get this chap back to the office and you can imagine the job on hand to convince this boy that he did have a fracture (for he had been informed by his family physician that there was no fracture). You can imagine the difficulty I had in making a second reduction. Both the doctor and the laboratory were communicated with and informed of my findings and they were courteous enough to say that they were sorry.

Dr. Kuhn and others who have held official positions in insurance companies could no doubt relate many such instances to you, so again I repeat that industrial medicine and surgery is a definite specialty.

Dr. Ochsner referred to the fact that it would not take many such cases as he related and show them to organized labor to get organized labor's support in having the Workmen's Compensation Act amended, so as to permit the man to choose his own doctor at the company's expense.

I recall the like efforts some years ago made by the contract practice committee, in which they stated (why does the doctor hold the bag).

An amendment to the Workmen's Compensation Act, eliminating the closing clause.

The employee may select his own physician at his own expense, is the remedy.

Last week we asked each member to make the acquaintance of the State Senator and State Representatives in their districts. This week we urge this as one of the best and most successful methods of securing legislative relief. Don't wait for your neighbor to go. *Do it yourself.*

I replied to this propaganda somewhat as follows:

CONTRACT PRACTICE COMMITTEE

Thomas P. Foley

Chairman

C. A. Earle

C. Gordon Burdick

As an industrial surgeon I read this with interest. The Contract Practice Committee, apparently in as far as I know, an authorized Committee of Chicago Medical Society, advocates a change in the workmen's compensation act, wherein an employee may contract a debt against his employer, the employer having no voice in the matter. On pondering over this I wondered how far those men would get in the business world if they permitted their employees to contract debts against them without

their knowledge or consent. It rather worried me, for if they advocated such business methods, would they not be apt to handle the business of the Chicago Medical Society in the same lax way, when to my relief I find that the Chicago Medical Society does do business in a business-like way, for attached to my bill for 1925 I find a notice which states as follows:

If sued or threatened with malpractice suit mail this slip to Dr. C. B. King, 4100 Madison St., Chairman Medico-Legal Committee, State Society. We pay no bills except those contracted by the committee. Do not employ attorneys.

For fear that I might have misinterpreted this notice, I communicated with Dr. King and he informed me that this notice meant just what it read, there would be no bills paid with the exception of those contracted by the Committee.

Are not we (Chicago Medical Society) rather inconsistent when we advocate a change in the law which would call for loose business methods for all employers operating under the Compensation Act and adhering to strict business methods in conducting our own business.

Is a member of the Chicago Medical Society less qualified to contract a debt in the name of the Chicago Medical Society than an employee working under the Compensation Act is to contract a debt in the name of his employer.

You may publish this letter in the BULLETIN if you desire to see a little fair play.

I have at no time received any answer from my letter, either to the Chicago Medical Society or the Contract Practice Committee and Dr. Ochsner's reference to this subject is the first that I have heard in the past four years.

I do not believe that this question between the Industrial Surgeon and the General Practitioner is such that it cannot be ironed out and I believe that a small Committee of each of the Chicago Medical Society and Industrial Society could take up these various items and clear the air for both sides.

Dr. Leroy P. Kuhn (in closing): I have nothing further to say except to thank the gentlemen for the interest they have taken in the paper. I believe Dr. Ochsner has shown us a way out in regard to some of these difficulties. It is very simple. It is just a square deal. That is about the sum and substance of the whole matter.

An important point that has come to us from the discussion this evening is that there are a few unscrupulous insurance companies which control many of these compensation cases. Until the medical officers associated with these unscrupulous insurance companies are of a different type, the quarrel will continue. I think the whole compensation problem is worthy of physicians' careful consideration.

ADMINISTRATIVE CONTROL OF COMMUNICABLE DISEASE*

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LANSING, MICH.

The attempt to establish the administrative control of communicable disease is almost as old as the history of medicine itself. It was early recognized that certain diseases were more prevalent when opportunity existed for contact between the sick and the well. Moses describes quite accurately the appearance of ulcers which are infectious and describes their appearance when they have become non-infectious. Whether the disease so described is leprosy or syphilis makes little difference; that keen-sighted statesman recognized the infectious from the non-infectious stages of the disease in a way that insured protection for those under his charge.

Among the early attempts to protect the public against the spread of contagion were laws allowing lepers to be upon the public highways, provided they carried a bell which they rang continuously and with the approach of any person they would call out, "Unclean! Unclean!" This early recognition of the transmissibility of disease, and of the importance of contact as a means of spread, leads us to believe that early investigators had a keen insight into these subjects.

Early Venetian port and medical authorities noted the fact that when boats from other ports visited their city, bringing cases of certain diseases, the disease immediately occurred among their inhabitants. This led to the inspection of passengers arriving by boat, a practice that is now established in every port of the world. It was also found in this early recognition of port quarantine, in the event that a case of communicable disease came to their port, if the passengers were held in harbor for forty days before disembarking the disease did not spread in the city. This is sound practice, although in most of the acute contagious diseases this period is entirely too long. Modern quarantine practice under similar circumstances holds people for the period of incubation of the disease.

Quarantine. The establishment of quarantine,

*Read before Section on Public Health and Hygiene, Illinois State Medical Society, Peoria, May 22, 1929.

therefore, for the purpose of segregating the sick from the well, is one of the oldest administrative public health methods in use. In so far as it breaks contact between the sick and the well, it accomplishes its purpose. However, every experienced health officer and physician realizes that in modern practice the actual segregation of the sick from the well is only a theoretical possibility. Sick people require the attention of nurses, housekeepers and physicians and these services must be rendered by people who come in contact more or less with persons outside the limits of the quarantine. The quarantine must, therefore, be looked upon as a sieve and not as a dam. The theoretical line that defines the limit of the quarantine merely establishes the area beyond which the infectious *material* must not be allowed to be carried. All persons having had contact with the patient must be freed of the possibility of carrying any infection beyond the boundary of the quarantine area. As our knowledge of this subject increases we are pleased to note that we are more and more successful in accomplishing this desirable end by means of modern ingenuity that makes the quarantine less irksome.

With increasing knowledge, the period of infectiousness of the patient has been more accurately determined and the irksomeness of the quarantine restrictions have been lessened. All modern health officials are very much in favor of reducing the irksomeness just as rapidly as available facts give them assurance that it can be done without jeopardy to the well people of the community.

When thinking of the rights of the person in quarantine, we must not overlook the fact that well people of the community also have certain rights which must be respected. It is quite easy to be overly sympathetic with the person who is so unfortunate as to be in quarantine and to neglect the rights of those good citizens of our communities who are well and wish to remain well. The greatest shortcoming of quarantine as a means of prevention of the spread of contagion is, in most instances, the tardiness with which it is applied. It is a well established rule that all contagious diseases are contagious from the appearance of their first symptom. How often do we see diphtheria masquerading for several days as a sore throat, and smallpox similarly masquerading as "a rash after the flu."

Just recently I visited a village in which there were 30 cases of very mild smallpox. The physician who had seen most of these cases explained that "it was the most peculiar outbreak of influenza" he had ever seen. He said that almost all cases "broke out in a rash after the influenza." If quarantine could be established as soon as the first symptom of scarlet fever or smallpox or diphtheria appears, no doubt it would be much more effective than it is in preventing diseases. As long as sore throats are as common as they are, in this section of the country, parents refuse to become excited until something about the sore throat calls attention to an unusual character. Frequently three or four days elapse, and in this time the mischief is done. Quarantine, no matter how rigidly enforced, established three or four days after the onset of the disease, will never be very effective in controlling the disease. Principally on this account the immunization of school children and preschool children is so highly important in the eradication of these diseases. In placing our confidence in quarantine as a means of elimination of diphtheria, scarlet fever, or of smallpox, we are indeed leaning on a slender reed and exhibiting a childish confidence in an administrative measure that will never accomplish our purpose. If we are to "make diphtheria ancient history," as we have declared we will do in Michigan, it will come about by immunization and not by increasing the severity of the terms of quarantine. In some sections of the country the quarantine regulations are far too drastic and severe. They have been made so by the health authorities who feel that quarantine is an administrative measure that will accomplish desirable ends.

My own feeling in the matter is that quarantine regulations diligently carried out can be made much less drastic than is common in most states and cities at the present time. The health officer must cease making quarantine restrictions more and more severe, if he expects to control disease, and unite with the physicians who are practicing medicine in a campaign to prevent these diseases by immunization.

Immunization. We feel in the State of Michigan that the only good use that a case of smallpox can possibly be to us is to make it possible to add another hundred or two hundred to the list of our people who are immunized by vaccina-

tion. One of the ways we determine the efficiency of local health officers is to rate them on the basis of the number of vaccinations accomplished for each case of smallpox reported in their jurisdiction. Truly the efficient health officer will utilize each case as a center of vaccination, extending this important work as far toward the periphery as possible. And the degree of his influence on the public health of his community will be measured directly by the length of the radius he thus establishes.

We have not proceeded as far in our scarlet fever immunization campaign as in the smallpox and the diphtheria campaigns; however, I am pleased to report that in the past three years, thirty thousand Michigan people have been immunized with our scarlet fever streptococcus toxin. This work has been done by fifteen hundred physicians practicing in our state. All children are immunized as they arrive at any of the state child caring institutions, and happily these acute contagious diseases have indeed become ancient history among these wards of the state. This same desirable end will be accomplished in the general population of the state when physicians, health officers and parents cease their implicit confidence in quarantine as a method of prevention of spread of these contagious diseases, and realize that there is a responsibility that each individual owes to himself: immunization.

The Physician's Part. In the State of Michigan we consider that immunization is clinical work and should be done by the physicians who are practicing medicine for their livelihood. The Michigan Department of Health furnishes the propaganda, the educational material, the biological material, the services of lecturers and organizers, but no clinical service. This public health work must be performed by the medical profession as a part of its regular service to patients. This has several obvious advantages: To send physicians from the outside to do any new phase of work in a community is bound to carry the impression to the lay mind that this particular piece of work could not be done by members of the local medical profession. This is a wrong impression. It is true that many physicians have not drilled themselves in the use of the Schick test, Dick test, or the newer biological procedures, but is it not the responsibility of a state health department worthy of the name to see to it that

there are one or more physicians in every community capable of carrying on such work? Another serious shortcoming in the method of state immunization is that it denies the local physician the opportunity to gain experience and knowledge in preventive medicine. This work should be an increasingly large proportion of his practice as time goes on. If the program of the state department of health takes this experience away from instead of giving it to him, how is this experience ever to be gained?

Closing of School. The closing of schools in times of epidemics has, since my earliest recollection, been a classical procedure. The first thought that occurred to the ancient health officer of previous and present time when an epidemic was impending, was to close the schools.

Recently a city health officer assumed the authority to close the school when an investigation revealed the fact that there was not a single case of the disease which was agitating him among the school children. In a recent outbreak of meningitis, severe pressure was brought on the mayor and the board of education to close the schools, although in 21 schools no school had more than one case of the disease. Such proceedings illustrate how readily the mind turns from the sound and scientific to the dramatic and spectacular. Closing the schools will certainly not prevent the spread of a disease that did not exist in the schools. This practice is so ingrained in the minds of some health officers and of many school boards that it is with difficulty we can restrain them at times.

The modern policy is more like the old custom of putting all the eggs in one basket and then watching the basket. Certainly our school laws require persons to attend school during the age at which they are most susceptible to contagious diseases. It is also true that our school laws require attendance at school during the months when contagion is most prevalent. It is also true that there is no place in the community where contact is more intimate among more people than in the schools. Therefore, the set-up is almost perfect for the spread of contagion. Therefore, in a situation such as this, so fraught with the means of the spread of communicable disease, the medical supervision must be sound, scientific and effective.

It will amuse you when I tell you how slowly

my own mind worked in this direction. In my early years in this line of work, I felt that the thing that was most needed for the control of communicable disease was a vigorous application of the administrative policies then in force. Among the others was the closing of schools in times of epidemic. One of my early assignments was the control of an outbreak of measles in a fairly large school. The school had been closed. Those among you who have attempted to control measles appreciate fully that the patients are infectious for at least two or three days before the onset of the rash. Consequently, if we are identifying the cases only after the rash has occurred, the patient has been spreading infectious material for two or three days prior to an attempt at administrative control. This means that an epidemic never will be controlled unless we find our cases two or three days before the rash, and segregate them from the public at that time. For the purpose of early detection of the case, I released all the medical members of my staff from other work and set them definitely at work on curbing this epidemic. We were to visit each of these children in their homes and identify the early symptoms of measles before the rash had occurred. At the end of the first day we had visited about one-third of the children attending school. It was then suggested that instead of our going to the children, they might better come to us. It was proposed that we establish a temporary meeting place where the children could come to be examined rapidly and with less travel than was involved by house calls. One of the places established for such an examination was the basement of the school building that had been closed because of this outbreak. In this manner the second day's work went off much better. However, we heard complaints about the noise and commotion made by the children at the other centers, so we decided to do all the work at the school where no such inconvenience would be caused. Those of us on the medical staff were not interested in the discipline of the place and, of course, the youngsters ran wild. In order to maintain some semblance of discipline, the principal of the school suggested that the teachers return and assist in the matter. When the teachers arrived, having real class room minds, they suggested that the children go to their regular rooms and sit in their own seats

until the medical staff could examine them and turn them loose. Of course there was a big hub-bub in the school building, and in order to keep the children occupied, the next step was short—they were asked to take out their books and the teachers assigned lessons. We had started out on the method of the school dismissed with the hope that it would stop the epidemic, but as we increased the accuracy and effectiveness of the administrative measures to control the disease, we unconsciously, step by step, brought the situation back to the holding of school in the normal way.

Since that time, this practice has been accepted by most well organized state and city health departments. Occasionally, however, we find some school board or mayor who persistently clings to the past and insists on doing the spectacular and dramatic thing by closing the schools in a vain hope that in so doing the epidemic will be stopped. Fortunately such ideas are rapidly disappearing and modern methods of administrative control are coming into vogue. We now feel that prompt, accurate, intensive, physical inspection of school children by physicians trained in this work will be much more effective in preventing the spread of the disease among them, than any other thing. No administrative procedure exceeds the effectiveness of trained medical personnel in this work. Consequently the physician is becoming a more and more important factor in school health work.

Reports. The reporting of the occurrence of communicable disease to the local health authorities is almost wholly the responsibility of the practicing physician. A local health department is just as helpless in fighting an epidemic as a fire department would be if the place where the fire existed was not reported to the fire chief.

In certain of the acute contagious diseases, the death rate and the complication rate are so low that parents are not much impressed with the significance of the disease and, if the case is mild, frequently do not call a physician. In this group we find mumps, chickenpox and German measles. Because of the low death rate and complication rate as well as the lethargy on the part of the parents in calling medical advice, certain health officers are not requiring these diseases to be reported. The point they make is that physicians see them so seldom that reports cannot be any-

thing but very incomplete. More general opinion is, however, that by requiring this practice, sufficient information will be gained to justify the means. Frequent outbreaks of smallpox begin in such a mild form that friends and neighbors furnish a diagnosis of chickenpox. In certain communities cases of measles are known to have masqueraded as German measles. While German measles is usually a very mild infection, having no death rate or complication rate, measles itself is a serious, killing disease. Among acute contagious diseases it rates second place, diphtheria being the only disease that causes greater devastation. Now that toxin-antitoxin has become so popular and is coming into such widespread use in many communities, measles is causing more sickness and death than diphtheria in these communities.

Some physicians raise the query as to why measles and whooping cough are required to be reported and cite as the basis of their query that no quarantine is established for either of these diseases. I have just spoken of the tardiness of the application of quarantine as an administrative measure, as being its weakest point in an attempt to control the acute contagious diseases. Recent research has demonstrated that in measles the infectious period is over within one week after the onset of the rash, and in whooping cough within two weeks after the onset of the characteristic cough. Inasmuch as the most highly infectious period of both diseases is prior to the onset of the characteristic symptoms, except in epidemics these cases are very seldom diagnosed prior to the rash or the characteristic cough. Quarantine under such circumstances would be quite futile in the control of the cases and would avail nothing except added expense and inconvenience to the parents. It may surprise some physicians to realize that modern public health authorities take into consideration such matters as the expense to the parents and the cooperation of the householder, in outlining administrative procedures in public health matters. The modern public health administrator does take these matters into consideration, for he realizes that second only to the good will and cooperation of the physicians, the good will and cooperation of the parents and taxpayers of the community are his greatest asset. Therefore, quarantine is required in diphtheria and scarlet

fever cases, because it has been found to be effective in the control of these diseases, and it is not applied to measles and whooping cough because it is not effective in their control, and to use it would only endanger the fine cooperation afforded competent health authorities by the physicians and their patients.

Placarding. Placards, as a method of administrative control of communicable disease, are used to inform the public where there is a source of danger. One type of placard is usually employed on the quarantined house to notify all comers that entrance or egress is forbidden by law. The other type of placard is used to warn the public that a menace to health exists there and that they enter at their own peril. The responsibility of the health officer in posting a placard is the same as the responsibility of the highway commissioner in placarding a bridge that is unsafe for heavy loads. The promptness of the local department of health in posting the placard and the respect of the neighbors for their own health through fear of the disease, are the two factors which determine its effectiveness.

Some years ago a physician laughingly asked me why we placarded the house which was not infectious instead of the child who was infectious. Although this was asked in the form of a joke or ridicule, I took it sufficiently seriously to try out the plan. Children with mumps, measles, whooping cough, chickenpox and German measles were required to be excluded from school for two weeks. During this time they were: (1) to remain in the house for one week; (2) during the second week to be allowed out of doors provided they wore a brassard on their arm. This brassard, consisting of a yellow ribbon four inches wide, was required to be worn between the elbow and shoulder of the left arm, and carried the name of the disease for which the child was excluded from school. Much to my surprise, newspapers gave publicity to this procedure and in a short time a number of American cities tried this same method. In my own city this method did not seem to be effective and was abandoned after less than one year of trial. During the try-out of this method I used to make it my business to be in the vicinity of some of these homes where children had these so-called minor contagious diseases, and to make first hand observation of

the degree of contact they had with children of their neighborhood. We gave the most impressive instructions concerning the means and the dangers of the spread of the diseases. These were to the effect that parents should instruct their children to keep away from children carrying this yellow brassard. Our observation was that when a child wearing a yellow band appeared on the street, he immediately was the hero of the group and became the center of interest and inquiry concerning it. We found that the children wearing the yellow band had more intimate contact with their playmates than when they were released without such a distinguishing mark.

Disinfection. No doubt one of the greatest changes in the administrative control of communicable disease in recent years is the changed attitude towards disinfection. Now that the transition period is past we can look back on the days when we had a sublime faith in the stinking fumes of the formaldehyde candle, and indulge in a quiet chuckle. While studying under one of the greatest masters of the medical profession, I learned that "Bad odors do not drive away disease, nor will frankincense lure health." It was no doubt a heritage of the superstitious past that physicians and health authorities were led to believe that the creation of vile-smelling fumes of formaldehyde or sulphur would drive away evil spirits or disease. Certainly no person who has given this matter more than a second thought would indulge in such practices today.

Some of the research that I did fifteen years ago proved very conclusively that in order to develop concentration of gases of any kind, sufficient to kill bacteria, a room must be provided with far less porous walls than any dwelling which it has been my lot to see. Not only will walls in a house not hold sufficient concentration of gases to kill bacteria, but a high degree of humidity must be present before these gases are effective. Under such airtight conditions as are found in the hull of a ship gaseous concentration can be raised so that sulfur dioxide gas will be fatal to insect life. For such use it is still approved. Likewise, fumigation utilizing the poisonous fumes of hydrocyanic acid has a very limited but important place in killing rodents and insects on shipboard. These methods are not applicable to the average dwelling and their use should be discouraged.

When we stop to consider for a moment the fragility and delicacy of many of the pathogenic organisms, we find that they need very little to cause their destruction. The coccus that causes the terrible disease of meningococcus meningitis is very delicate and dies almost as soon as it reaches room temperature. This makes it almost impossible to do laboratory work on spinal fluid taken from persons living in remote parts of the state and sent by mail to the central laboratory.

The gonococcus is likewise not at all suited for life outside of human tissues and dies very soon after leaving the human body, if not placed at once on suitable media. When gonococci are brought in contact with pure water, they can be seen under the microscope to increase in size, and finally lose their cellular integrity. Similar observations made with *spirochaeta pallida* in the presence of soap solution show that they cease their motion and after a short exposure cannot be revived on any artificial media. Any of the pathogenic bacteria when exposed to the action of sunlight and drying, rapidly lose their virulence and lose their lives in a comparatively short time. Anthrax is one of the rare diseases that is quite resistant to the action of sunshine and drying and all materials contaminated by anthrax infection should be disinfected by burning.

Perhaps we have been bloodthirsty in the past in our efforts to seek vengeance on these tiny bacteria because of the devastation they have caused in families under our care. If we will stop to think of the subject logically, we will realize that when an object has had infectious material removed from it, it is then disinfected. Realizing that many, if not most, of the pathogenic bacteria that leave the patient during his illness must be dead before the quarantine period is over, much of the excessive zeal on the subject of disinfection in the past has been misguided. Certainly the greatest source of infection is the patient himself, and by the time of clinical recovery, any bacteria that he has excreted will have long since been dead. The washing and boiling, then, of the articles and objects which have been in closest contact to the patient and thereby offer possibility of most serious contamination, will be sufficient in most cases. Certainly if washing and boiling of articles from the sick room is followed by drying in the open air, and

allowing the benefit of the disinfecting rays of the sun, all that can be accomplished by terminal disinfection will have been accomplished.

We must remember that the patient himself offers the best media and optimum temperature for the growth and development of bacteria. Modern research shows us clearly that in defending itself against these parasitic invaders, the human body makes two kinds of defense that are quite separate and distinct, in their immunologic mechanism. The first is a defense against the presence of the organisms themselves and the second is a defense against the toxic properties of these organisms. The bodily response to the presence of these bacteria and these toxins we speak of as symptoms of the disease. We consider our patient recovered when the body has been able to defend itself successfully against them and their poisonous products. It is not necessarily true that when the patient has recovered he has been successful in his defense against the presence of the organism itself and in certain diseases, notably diphtheria and typhoid fever, bacteria do persist in the human body after the body has been able to defend itself against the toxic products caused by these bacteria. This we speak of as the development of the "carrier" state.

In many modern communities the supervision of the water supply, milk supply, food handlers, has been perfected to such a degree that they do no longer constitute a menace to the health of the public. The small amount of typhoid fever still prevalent in such communities is due to the type of carriers we will always have with us as a heritage of the typhoid fever previously tolerated in the community. Inasmuch as these unseen foes of our patient's health will be with us as long as we tolerate diphtheria or typhoid in the community, it is becoming a staunch pillar in the program of every public health administrator to breed an attitude of intolerance to the presence of even a small number of either of these diseases. When parents can be brought to understand that the menace of the carrier is always present, and the only safe way to protect the children against various of the communicable diseases is by immunization, a long step in the right direction will have been taken. This immunization should be performed by the family physician as a part of his service to the family.

The physician's office is the place where this type of service can best be rendered, and until each physician's office becomes a center of which the parents instinctively think in the protection of their children's health, this desirable objective cannot be reached.

It is certain that in preventing thousands of cases of diphtheria and typhoid fever, much of the former practice of the family physician is being eliminated. Many forward looking physicians have already replaced that part of their income lost by the decrease of acute contagious disease by incorporating into their private practice these immunological procedures.

It takes only a few minutes with pencil and paper to see that in my own state 82 people out of every hundred thousand population contracted diphtheria last year. 82 cases of diphtheria at one hundred dollars per case would amount to over eight thousand dollars. During the year, 97,462 infants were born in Michigan. If these infants were immunized at three dollars per capita, the income from this work alone would be nearly \$300,000. I do not wish to encourage physicians to go into this work for mercenary reasons, but the lives and actions of physicians are necessarily affected and controlled by the economic laws that are active in every other group or profession. I propose for your very careful consideration that high grade immunological practices be incorporated in the daily work of every modern physician. For it is then, and only then, that the public health worker and the medical profession will be rendering the greatest benefit to the people whom they serve.

DISCUSSION

Dr. A. A. Crooks, Peoria: Many points of this paper are so basic and so well presented I feel it needless for me to remark on more than just a few. There are some angles that I would like to bring to your attention, most of which will be from a slightly different viewpoint from that of the essayist, because I bring to you the viewpoint of the school man which, because of his close association with the case from its prodromal source to its quarantine lift, is somewhat different from the viewpoint of the health commissioner, whose contacts are largely by "remote control," i. e., through medical attendants or parents making reports of communicable disease.

Dr. Griswold speaks of the chaotic conditions that now exist in the matter of quarantine and he was thinking then in terms in nation-wide administration and control measures. It would surprise many of you, I am sure, to know the difference that exists in various

communities of our state, and the greater variations that exist in the varying states, not only of the legally recognized incubation period, but of the quarantine period as well. To correct such practices, so obviously perplexing and unsound, I attempted by resolution and the appointment of a committee of representative epidemiologists in the annual meeting of the American Association of School Physicians last October, who are now gathering data, with the end in view that we might have a more or less standardized, if you will, method existing in the varying states looking to communicable disease control.

Now Dr. Griswold is on very advanced ground in his attitude toward quarantine periods, and more particularly whether we shall quarantine certain of the communicable diseases. In this connection, my first rude shock was obtained three years ago while in attendance upon the American Public Health Association in Buffalo, I think it was, when men of national and inter-national reputation, boldly asserted that in their opinion it would not conserve public health, and would continue to antagonize family physicians, and parents, if we considered quarantine measures necessary for some of the so-called minor communicable diseases, meaning whooping cough, chickenpox, mumps and the like, and some were even so bold as to include measles.

It did shock me rudely, because personally, I had been working along very different lines. With a moderate degree of cooperation of the physician and family, insisting on early reports of all communicable disease and strict quarantine of the case and non-immune contacts for the full incubation period, I maintain that the control of communicable diseases, even including measles, mumps, and chickenpox can be limited to sporadic or endemic proportions by strict isolation of the case and contacts of same, especially centering on the latter. Such control is purely an economic question in school work.

Dr. Griswold touched upon a point that I would like each and every one of us to assimilate, a gospel that I should like for you to get over in your communities, and that is the part that the local family physician plays and must continue to play—in the matter of early diagnosis of communicable disease and the attitude that they would inculcate in their clientele toward observance of safety measures.

My department personnel is at all times under instruction wherever they go, in making home calls, to sell the family physician. I would say in this friendly group that it is something of a necessity to sell again and sell back the family physician, because I think everyone of us here realizes that the family physician in the past decade has lost considerable of former prestige in being known as the family adviser. May he speedily regain his rightful heritage, is the wish of all true health officials.

The other matter, that of immunization is a health educational matter after all. Certainly it is better to prevent than to attempt to cure. With the many complications interwoven with communicable diseases and the sequelae that follow, better that we prevent these

things than to have the burden of caring for them, because I do not believe that the average physician is making the greatest amount of his income out of communicable diseases. That is the reaction that I get from physicians. That was not so a few years ago. It was seemingly thought by some that it was a considerable means of their livelihood and there was some resentment toward the curbing. Now that was not altogether from the point of view of being greedy or money mad, I am quite sure. I think it was a hang-over more particularly from past practice of our forbears.

I am finding the physician is seeing a great light along immunity lines, and he is proving very helpful, but we have not progressed in our health educational matters to the point where I feel that the family physician is really functioning as thoroughly one hundred per cent as he should be functioning in carrying on, our pleas for immunizations. The excuse is often given, when a physician might meet me on the street or other place, and in commenting and even commending some public utterance of mine urging individual parents and as a group community to immunize against communicable diseases, pat me on the shoulder and urge that I keep up the good work, but the majority of our upstanding physicians are not carrying on as thoroughly as they might, for the reason that they feel that their clientele might think that it was a selfish motive that impelled their importunities.

I trust that this attitude may speedily change. The remarks of our friend, Dr. Kegel, Chicago's Health Commissioner, before this Section yesterday would indicate that he is finding this same difficulty in that cosmopolitan city that I am finding in Peoria, and which I know you are finding elsewhere in the state. As a matter of fact, the control of communicable disease does not, I feel, rest entirely on the shoulders of the health official, but must be borne unflinchingly by the family physician in doing his bit. I believe too, that the health official should do all he possibly can one hundred per cent to get child life in the hands of the family physician for immunity purposes.

There is a matter of prevention and communicable disease control that I would like to mention. Health education matters are not altogether within the province of family physicians or health officials. I think that the greatest good, if I am accomplishing anything whatsoever of merit, has been in my contact with the teaching profession, in giving them basic symptomatology of communicable diseases, easily and readily understood by a lay individual, who is ordinarily well educated. The only trouble I had in the beginning was the necessity for such an observance, since which time, personally, I depend, and I find that I can very thoroughly depend upon the teaching personnel to detect the prodromal symptoms of the more commonly met exanthemata and the prompt exclusion of such pupil.

The other method pursued by your discussor is a matter of bringing the subject directly to the pupils' attention in the school room. For instance, if we have a chickenpox exposure in a room, giving them the first symptoms of this disease, the incubation period, segre-

gation and precautionary measures and strange to relate, I get reaction from the primary groups equal to the advance groups. Now I wonder at that very often, but it is very true,—they take the story home, and I find it a very helpful means in checking and controlling communicable diseases, just another health educational procedure that I feel that we are not utilizing as much as we should.

In closing, I want to thank Dr. Griswold, our honored guest, for this very well prepared paper. He brings, I can assure you, a wealth of experience to this subject, and I compliment the officers of the Section in securing the services of Dr. Griswold.

CLINICAL SIGNIFICANCE OF INTESTINAL FERMENTATION*

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Fermentation, referring to abnormal gas formation in the intestinal tract due to disturbed carbohydrate digestion, is a symptom common to a number of intestinal disturbances. It occurs relatively frequently and its recognition is imperative in order to promptly treat these various disturbances of intestinal origin. Fermentation is regularly confused by the laity and doctors alike with such symptoms as abdominal distention, belching, and abdominal and precordial pains; where the disturbance is due to peculiar nervous disorders, aerophagy, cardiac decompensations or upper abdominal pathology. Such types of flatulence and those due to the relatively infrequent putrefactive disorders are to be distinguished from actual carbohydrate intolerance of varying degrees, as I will point out later.

Fermentation will be suspected in those individuals disturbed with excessive flatus, alternating constipation and diarrhea, passing of explosive, loose stools at times and possibly the recognition by the patient of an inability to take candy, concentrated sugars, potato, excessive bread or milk. Depending upon the cause for this intolerance, there will be little or much inconvenience. He may have learned that by removing certain food from the diet he will be able to go along in perfect comfort, while again in more serious types no amount of alteration seems to have any permanent effect in controlling the intestinal disturbance. The more profound the patient's disturbance the more likely

is he to be constantly and chronically involved with digestive troubles. Fatigue, nervous and physical instability are symptoms commonly present and in direct proportion to the intestinal disturbance.

The physical examination will often reveal very little except perhaps moderate tenderness over the colon, or slight distention of the abdomen. Frequently the cecum is tender and distended with gas and liquid. There may be loss of weight and often in the more severe types a definite hypotension.

A study of the feces must always be made. Often the stools are not normally formed but contain lumps and undigested vegetable residue. In the more pronounced types they will be frothy, foamy, often light of color and have a typical sour odor. After a Schmidt test diet, or some modification of it that contains cooked and uncooked starches, the feces will appear gassy, foamy, and smell of acetic acid. Starch will readily be found by microscopic study.

The main digestion of food occurs in the small intestine. Amylase, a powerful pancreatic ferment, digests starch as does also the ferments in the succus entericus. The exclusion of amylase from the intestine does not seem to greatly affect the carbohydrate digestion, so that we are abundantly supplied with starch and sugar ferments. It has been suggested, however, that an absence of amylase in the succus entericus accounts for the unusual carbohydrate intolerance in the so-called intestinal fermentative dyspepsia of Schmidt and Strasburger.

The small intestine not only digests all food but absorbs practically all of the final products of digestion. Absorption may, however, be disturbed in extensive amyloid disease, widespread intestinal tuberculosis or conceivably also in increased intestinal motility.

It is almost axiomatic that the small intestine is one of the most accurate workers in the body, yet we must explain this perversion of function which seems to be present in order to understand the presence of the starch in the colon.

Perhaps the most common cause of flatulence due to fermentation is an irritability of the intestinal tract. This disturbed function is usually primary in the colon and secondarily involves the upper tract. Too vigorous use of bran or other diet roughage, or excessive cathartics can

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produce what is commonly called an irritable bowel. Soon after this perverted function of the colon appears the small intestine is likely to become over active, and usually with catarrhal involvement. Either a too rapid emptying of the small intestine occurs, or as has been suggested, the excess cellulose in the diet carrying starch with it, is dumped prematurely into the colon with only one natural result, that of starch fermentation. The clinical proof of this deduction would seem to lie in the very prompt relief obtained after prescribing a soft diet from which the cellulose has been largely removed.

Whenever the irritation has continued for a long time, however, as is often the case, an actual enteritis is established. The patient will then not improve on a soft, smooth diet but will be actually intolerant to one or many sugars and starches, as for instance, milk, potato, rice, cereal and the like. By instituting a high protein, low carbohydrate diet there will be a prompt relief from fermentation and the commonly associated diarrhea. I have found that the use of a diastatic ferment will aid in the prompt return to the normal state. The irritation or inflammation of the colon and small intestine, as the case may be, will disappear as soon as the irritant is removed.

Fortunately, the usual type of fermentation observed is of the foregoing type. There is, however, a more severe and frequently intractable type described many years ago by Schmidt and Strasburger known as intestinal fermentative dyspepsia. Certain constitutional symptoms are very often present, such as marked nervousness, palpitation, loss of mental and physical stability. The feces are characteristic, presenting the typical foamy, frothy, liquid to pasty appearance with an associated sour odor. When such mucous is present there is more likelihood of there being an actual inflammation in the intestinal tract and in consequence a less hopeful prognosis. In this instance there seems to be a distinct constitutional disability on the part of the small intestine to digest starches. An absolute starch free diet is indicated, and if carefully followed, there will usually be a gradual return to a fair carbohydrate tolerance. Bear in mind this one conception, however, that the irritability of the intestinal tract will frequently be precipitated by an improper diet, acute infection, or excess cathartics; and following this an increased mo-

tility with fermentation resulting. The organic acids produced plus a possible bacterial change will continue the irritation of the bowel to a point of inflammation, which later condition will interfere with the formation of the intestinal juices and produce a definite vicious circle.

Kendall has described a clinical picture presenting symptoms not unlike those of the Schmid-Strasburger syndrome—constipation with diarrhea, meteorism, indefinite pain, hypotension and intolerance for starches. He noted especially the frequency of abnormally large numbers of gas bacilli of Welch, and starch fermenting members of the mucosus capsulatus group. He does not insist that the bacteria present in the colon is the true cause of the condition, but at least plays a very active part. He believes that "these organisms develop overabundantly in the presence of carbohydrate, and is due to a restriction in the activity or a reduction in the number of normal organisms that otherwise would restrain the growth of the gas bacilli." He advises a diet low in carbohydrate plus sour milk, the virtue of the latter being the presence of preformed lactic acid which depresses the growth of the gas bacilli. It is reasonable to presume that the overgrowth of these organisms can have a profound effect on the functions of both the small and large intestine, yet to me, rather unlikely that they are the true inciting cause, particularly in view of the varying degrees of carbohydrate intolerance observed.

Fermentation, therefore, is most frequently associated with functional disturbance rather than with organic disease. Furthermore, it is quite regularly associated with diarrhea. As with fermentation, so with diarrhea, the proper understanding and treatment of the symptom presupposes an accurate study and appreciation of the underlying pathology. Amebic dysentery, ulcerative colitis, simple or ulcerative proctitis, and carcinoma of the intestine are all diseases that, because of their irritating effect, produce the associated symptoms of fermentation and often indeed it is necessary to limit the carbohydrates to obtain a symptomatic relief. Whatever the underlying pathology is in sprue, one thing is certain, that there exists a distinct bacterial disturbance and perversion of the function of the intestinal tract. Holmes has demonstrated practically the same findings in his cases of so-

called non-tropical sprue. Usually all carbohydrates are omitted from the diet for a long time in order to secure permanent results. T. R. Brown, contrary to most observers, has obtained great help from the use of pancreatic ferments in the treatment of sprue. Pellagra, a vitamin deficiency disease and pseudo-pellagra are examples of the necessity of recognition of the factor of fermentation in the proper management of the intestine. In true achylia gastrica and in pernicious anemia, diarrhea evidences of fermentation are often present. The striking result obtained in these patients by giving relatively small amounts of dilute hydrochloric acid would scarcely seem to be due to the anti-bacterial effect of the acid. Is it due, rather, to the influence that the acid has upon the production of secretion from the pancreas and glands in the small intestine?

The time honored dietetic treatment of diarrhea by a high carbohydrate-low residue diet must be limited to those patients with a disturbed motor function of the colon with little or no direct or reflex troubles in the small intestine. Wherever there is a perverted secretory function due to a long standing irritation or inflammation with evidences of disturbed carbohydrate tolerance, a diet must be chosen which will produce a minimum irritation, limiting the carbohydrates and in some, if not all cases, attempt to depress the activity of certain harmful types of bacteria.

Many case histories could be shown which would bear out the above conclusions, but these observations and deductions of one phase of intestinal disturbances are presented with the hope that they will stimulate a greater appreciation of the problems of functional perversions of the intestine and offer a subject for further clinical investigation.

DISCUSSION

Dr. E. V. L. Brown, Chicago: Much as specialization is deplored, we must recognize this as an age of specialization and the next generation will doubtless continue in the same general trend. It is, therefore, fitting that we give attention, and indeed much more than we have, to the training of specialists. Universities and medical colleges in this country have been almost wholly concerned with undergraduate training, and post-graduate training of the beginner in a specialty has been given serious attention in only a few instances.

At present there are five undergraduate medical

schools in Chicago, and so far as I can learn, in only two of these is there any stated training offered for the beginner in the specialties; one college offered eye and ear, dermatology and radiology courses, the other eye courses only. There is no post-graduate course offered in genito-urinary diseases, gastroenterology, neurology, pediatrics and orthopedics, all well developed specialties with many eminent undergraduate teachers in these colleges.

These five schools graduated 468, or about one-tenth of the total number of all who obtained the title of Doctor of Medicine in the United States last year; but they had only a few students registered in a course for those entering specialties. Some seven or eight hundred Americans studied at the University of Vienna alone last year. No rapid improvement in this situation can be reasonably looked for. It can only come about by a very great increase in the number of patients under the exclusive control of university medical school faculties, and a genuine manning of these clinics and hospitals by university staffs. When this does come we will offer instruction and training which will attract and hold our own graduates. With proper encouragement from university authorities, especially proper additions to personnel, and, above all, the necessary enthusiasm of a few individuals such as Dr. Allen and Dr. George Shambaugh, a very large number of those who wish special training would not leave the middle west for Europe, either from choice or necessity.

In any discussion of methods one must recognize the need and value of more or less didactic teaching and the study of assigned cases as a whole by the individual student. This usually includes the taking of the history, various objective and subjective studies with instruments of precision, and a demand upon the student that he make a reasonable amount of deduction. This assumes that he has obtained the necessary technic to carry out the individual steps. To my mind this method alone is open to great theoretical objection, and is often faulty because the student has not first acquired adequate proficiency in technic. I much prefer to train the student most elaborately in these processes through a period of approximately nine months before he is asked to put two and two together and conclude it makes four. Indeed, in my opinion, it is technical inadequacy and inefficiency which characterized the poorer eye doctor rather than lack of didactic knowledge. But in technical proficiency I include ability to write a good history, to make a good description of an external disease status, a good fundus description, good visual field tests, etc. To obtain this, the most expeditious plan is for the student to work exclusively upon one process until he has satisfactorily completed a certain percentage, eighty or ninety, of a stated number of these determinations, then take up another process. I begin with central vision and require that the student get ninety out of one hundred consecutive tests of vision within one-half line of the determination made by a member of the staff or a more advanced student. This usually takes two to three weeks. At the same time he is neutralizing a set of lenses of strengths unknown

to him but listed with the teacher. Here, too, he is allowed a certain minimum of error. I do the same with retinoscopy, trial case tests, tonometry, visual fields, external disease descriptions, fundus descriptions, types of discs, gross descriptions of enucleated eyes, sectioning, staining and microscopic descriptions of sections, etc. Certain reading may well be assigned. As many as five students may be easily so accommodated in a clinic of six new cases a day with the use of not more than one-fourth the time of the instructor which is required by class or group teaching. The instructor must be both a good ophthalmologist and teacher, however, and also a good administrator, otherwise this individual process-training, as I call it, is no training at all and only a delusion to all concerned.

Dr. George W. Boot, Chicago: A specialist should know the general field of medicine as well as the general practitioner of medicine, and should know his own field better. Then there will be less passing the buck back to the internist.

Dr. Thomas D. Allen, Evanston (closing): Recently I was taken to task very severely by one of the surgeons because the eye staff was not working up its cases in the hospital from a medical standpoint as well as the medical staff was. The point is well taken. We must not only be specialists but we should know general medicine, in order to impress the importance of our ideas upon the general practitioner and in order to obtain his co-operation. Also, unless we can assimilate his ideas on those cases in which we are both interested we will not accomplish our purpose as physicians. As Dr. Roth has said, we should have close co-operation with the internist; and I think not only the general practitioner will benefit but we will also.

THE THYROID-HYPERTROPHY-SUBNUTRITION SYNDROME*

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Introduction. Undernourishment in exophthalmic goiter or Graves' disease is the result of excessive catabolism, a pathognomonic evidence of the disease. This paper deals not with Graves' disease but a class of patients suffering with subnutrition and moderate thyroid hypertrophy, in which the latter is apparently the result of the former, creating an entity which might be termed the *thyroid-hypertrophy-subnutrition syndrome*. Usually this is not associated with heightened metabolism.

Etiology. The average patient is a young woman varying in age between 19 and 30, though the condition may be observed during puberty or even as late as the forty-fifth or fiftieth year.

Erroneous dietary habits dominate the history. Insufficient food intake is an outstanding feature. Bread, the mainstay in the maintenance of normal weight, is largely or wholly omitted. There is often an aversion to milk, buttermilk and other dairy products. Eggs, too, are soon regarded as indigestible and practically discarded. The elimination of these important elements leaves scarcely anything else of high caloric value in diet. Hence these persons live on tid bits, are occasionally immoderate meat eaters, and love to take their meat well spiced. Eventually digestive disturbances become evident and meats, too, are restricted to avoid discomfort. Soon the caloric intake is but a fraction of the bodily needs and the stomach capacity becomes habitually reduced. After a while a sporadic inspiration to take more food leads to further discomfort. Thus a vicious circle is produced; the deficiency of food intake produces gastric atrophy, and gastric atrophy in turn compels a deficiency of food intake. The depravity of appetite may lead to a desire for tea and coffee in large quantities, more especially when it is discovered that these substances appear to relieve the fatigue and depression complained of. Habituation to these beverages may result in the taking of from three to fifteen or more cups per day. Coca Cola and other "soft drinks" which are rather hard on health also command their share of favoritism. The same may be said of sour pickles, "hot dogs," the various preserved delicatessen foods, mustards, tabasco sauce, pepper and other irritating condiments. Sooner or later such a patient may develop catarrhal symptoms of the entire digestive tract and these may dominate the clinical picture. Subnutrition, secondary anemia, and reduced vital resistance now are obvious, and these engender a degree of thyroid hypertrophy.

Irregular eating is another factor in etiology. Late retiring leads to the habit of overlooking a substantial breakfast. The appetite becoming obtunded, the desire for lunch is reduced. Under such a regime, the evening meal, too, is taken without a normal appetite.

Deficiency of food residue from insufficient food intake leads to habitual constipation, the resultant auto-intoxication adding its deteriorating effect to those already present. In this category of toxins may be included cigarette smoking.

*From the Bram Goiter Institute, Upland, Penna.

This desire extends itself first as curiosity and soon leads to a constant craving in which tobacco becomes indispensable. The desire to reduce and become thin is at least a predisposing cause of the condition herein described. Occasionally the speeding up of the reduction process is accomplished by drugging with toxic anti-fat remedies, with results that have been known to prove fatal. An occasional cause of the thyroid-hypertrophy-subnutrition syndrome is goiter phobia, in which, because of the widespread publicity given goiter in lay periodicals, an introspective young woman will believe that she has a goiter and dose her-

occurs in males. The average patient, a woman varying in age between 19 and 30 years, complains of constant weakness, fatigue, pallor, poor appetite, digestive disturbances of varying nature, stubborn constipation, restless sleep, nervousness, occasionally palpitation and shortness in breath. She may even complain of choking sensations, which can be assigned to associated *globus hystericus*. She may also complain of goiter, which may be her own discovery of a rotundity over the thyroid area. Often someone else has called her attention to a convexity over the neck. These symptoms have existed for from several months



Fig. 1: 1. Thyroid hypertrophy in a young woman of 22. Weight 110, pulse rate 120, metabolic rate minus 2 percent. 2. Case in a girl of 20 weighing 90½ pounds, pulse 100, metabolic rate plus 15 percent. 3. Case in a 35-year-old unmarried woman, weighing 100 pounds, pulse 72, metabolic rate minus 12 per cent. Note that adenomatous

infiltration has already started due to the chronicity of the thyroid swelling. 4. Case in a woman of 28, weighing 84 pounds, pulse rate is 90 and metabolic rate minus 2 per cent. 5. Case in a young woman of 21, weight 100 pounds, pulse 110, basal metabolic rate plus 5 per cent.

self with iodine. Appetite is reduced by this drug, the thyroid gland becomes enlarged by the load that is put upon it in an effort to combat this toxin, and soon we have with us another case of goiter and subnutrition.

Occupations, too, at times are responsible for this physical condition. Artificiality of lighting and ventilation result in undue fatigue, create an aversion for food and an undue craving to be entertained at the close of day. Since amusements are largely nocturnal avocations, this must of necessity be at the expense of necessary repose. This factor alone, in which a person requiring at least eight hours' sleep receives but six, may lead to intense fatigability and depravity of appetite, with all their consequences.

Subjective Symptoms. This syndrome rarely

to several years and it is the accentuation of weakness, loss in weight, nervousness and digestive disturbance that brings her to the doctor. Occasionally the patient complains of nothing but goiter, regarding the remaining complaints as unimportant details.

Objective Symptoms. The patient appears frail, under weight and anemic, with a languid, tired expression, and a moderate swelling over the thyroid area. The skin is usually thin and dry, the eyes are by no means exophthalmic, but occasionally appear retracted (enophthalmic) from emaciation. Tonsils and teeth may or may not present infectious foci and if these exist may be directly or indirectly etiologically related. Blood pressure is usually low, often not above 100 systolic. The heart rate is either normal or is mod-

erately hurried and is easily flared up on the slightest physical or mental provocation. Hemic murmurs are common.

Arterial hypotension with a systolic pressure of 90 or less may be observed. Also the heart



Fig. 2: A young married woman, 23 years old, weight 110, pulse rate 98, basal metabolic rate minus 8 per cent, presenting a hypertrophic thyroid which though not evident on inspection was quite palpable. 2. The same individual six months later with complete disappearance of thyroid hypertrophy and other evidences of subnutrition syndrome after a gain of 30 pounds in weight.

rate may yield a strong suspicion of hyperthyroidism, yet the basal metabolic rate may be within normal limits. The tachycardia may be assigned to sympatheticotonia which yields promptly to eserine.

The thyroid gland must be examined carefully. In some instances of pure subnutrition there is but an *illusion* of goiter, due to the prominence of the normal gland in bold relief because of a deficiency of adequate covering of adipose tissue over the organ. In this paper we are dealing with actual thyroid enlargement as a result of subnutrition. The thyroid hypertrophy with obvious goiter formation apparently arises from one or more of the following causes: 1. deficiency of the immunizing property of the blood so that the thyroid must compensate and enlarge to assume the necessary poison-fighting properties against the inroads of disease; 2. coincidental or causative infectious foci in teeth, tonsils, pelvic organs, appendix, gall bladder and even lungs; 3. late adolescence in which the physiological strain of the developmental processes in the

presence of nutritional errors may induce thyroid hypertrophy.

Primarily the thyroid participates passively in the general depression, and its function is at its lowest normal point. For example, if the patient is 10 or 15 pounds below weight, the basal metabolic rate may be somewhere between zero and minus 10 to 15 per cent. As weight and vital resistance diminish, the thyroid must compensate for deficient immunizing functions elsewhere. The demand now made upon the organ tends to cause hypertrophic infiltration, which becomes evident. One who should normally weigh 130 pounds may now weigh 100 or 110.

In the usual clinical picture the heart rate is practically normal, and if increased need not be attributed to hyperthyroidism. Indeed, we may expect the metabolic rate to be somewhere between minus 20 and plus 14 per cent. A recent case presented a heart rate of 120 per minute, yet the metabolic rate was plus 2 per cent.

Diagnosis. The thyroid-hypertrophy-subnutrition syndrome must be differentiated from other apparently similar conditions. In *simple*



Fig. 3: 1. Twenty-eight-year-old married woman, weighing 90 pounds, with pulse rate of 100 and metabolic rate plus 7 per cent. 2. The same individual about one year later with total disappearance of thyroid hypertrophy, a gain of 30 pounds in weight and considerably improved sense of well being.

goiter in a patient past the age of 19 or 20 with average weight, thyroid swelling is most likely adenomatous or cystic in nature, is fairly large, and there is a probable history of thyroid enlargement of several years' duration. *Subnutrition per se* must be differentiated, even though there

is *apparent* goiter. I have already mentioned the possibility of a thyroid of normal size standing out in bold relief and giving an *illusion* of goiter because of the absence of the normal layer of adipose tissue over the neck. *Atypical exophthalmic goiter* may present a slightly enlarged thyroid without exophthalmos, associated with subnutrition and secondary anemia. Here the history of the case (psychic trauma, etc.), the more sudden onset of the symptoms, the constant tachycardia, tremor, markedly heightened metabolic rate and excessive appetite will assist in discrimination. Demographia, hyperidrosis, and relative immunity to cinchonism are further evidences of Graves' disease. *Early tuberculosis* should present no difficulty in differentiation. The same may be said of *intestinal parasites* and other *gastrointestinal conditions*, *early diabetes mellitus*, and the *primary anemias*.

The main features in the diagnosis of the thyroid-hypertrophy-subnutrition syndrome are the sex of the patient, a history of gradual loss in weight and strength, poor dietary and sleep habits with anorexia, the recent occurrence of moderate thyroid swelling of nonneoplastic nature, and the absence of a materially heightened metabolic rate.

Treatment. The major need in these patients is the correction of causal factors, with improvement in weight and blood picture. When this is accomplished the thyroid becomes normal.

The food intake must be ample, with bread, milk and eggs as mainstays. Animal food should be restricted to fish, lamb and fowl in moderation. Tea, coffee, condiments and the spices must be completely prohibited. Extra nourishments, i.e., a milk and egg shake, or a cup of half milk half cream mixture, or some other combination to serve the purpose should be taken between meals as soon as the digestive organs are in receptive condition.

The patient must be made to realize that the stomach, having become rather shrunk from disuse, can be made gradually to distend itself through the forced acceptance of greater quantities of food than has been the habit, and each week greater and still greater quantities of food can be taken, until this organ is capable of holding and digesting the maximum normal. After a varying period of time the quantity of food

formerly productive of discomfort will be taken with ease. The weight must not only reach normal but must go somewhat beyond for good measure. I usually urge a five per cent. increase over and above the individual's normal standard of weight as the goal. The patient must virtually "live to eat" until recovery is achieved.

A minimum of nine hours in bed each night is imperative. The proper bedroom hygiene, especially the matter of fresh air, should be assured.

Psychotherapy is an asset in the management of these patients. The medical attendant should help in the task of eliminating erroneous habits of life.

While drugs play a minor role in the management of these patients, an occasional prescription expedites recovery. Iodine is of no service, as it increases the size of the thyroid gland by increasing its colloid content, it engenders a bitter taste in the mouth, thus further obtunding appetite, and the occasional rash resulting from its use is annoying. Also a thyroid of this type may become toxic from iodine administration. *Extract of thyroid gland* in cautiously administered doses under proper guidance is of signal service when the basal metabolic rate is not in excess of plus 10 per cent. Despite occasional moderate heart hurry, properly administered thyroid extract usually is not contraindicated. The thyroid is most apt to shrink under its use; the appetite is sharpened and the sense of well-being improved. Of course, it is assumed that the medical attendant begins with doses not exceeding grains 1/10 daily, sees his patient at least once a week, and checks results with metabolic observations. *Iron* and *arsenic* are highly useful. In the form of the Sumbul Comp. pill, these substances speed up progress as no other drugs can. For the restlessness, sleeplessness and the like small doses of Barbitol, grains i or ii t. i. d. or grains v to vii at bedtime only, are very helpful. Occasionally a patient thrives on a good preparation of *cod liver oil*, but we must be careful to individualize, for, in the event of an aversion to this substance, insistence that it be taken may defeat our purpose in the matter of food intake.

In the event of persistent heart hurry, eserine salicylate in doses of gr. 1/60 to gr. 1/40 t. i. d. is of great help.

Nausea, anorexia, flatulence and constipation

must be combated on general principles. Drastic cathartics must be avoided.

Prognosis. In the event of faithful cooperation on the part of patient and household, patients with thyroid-hypertrophy-subnutrition syndrome become well in the course of 5 to 8 months. The gastrointestinal functions, weight and blood index acquire perfection and the individual enjoys perfect health thereafter. The cause of thyroid hypertrophy now having been removed, this organ assumes normal size. Occasionally there is some degree of thyroid sluggishness for a year or two after the patient has otherwise recovered. This should be confirmed by basal metabolic studies and minimal doses of thyroid extract given until the proper functional balance becomes established.

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THE CLINICAL TRAINING OF THE GRADUATE STUDENT IN OPHTHALMOLOGY*

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In this paper we present the method of training given at Rush Medical College of the University of Chicago, to the Graduate Student in Ophthalmology during his first or fundamental year in the specialty, and the reasons this method is used. We do not believe that a year's work will adequately prepare anyone; but the first year is the most important and most difficult for him. As a twig is bent, so will it grow.

The need of better preparation and of better training of the physicians who limit their practice to Ophthalmology is admitted. The American Board for Ophthalmic Examinations has aroused the profession as has no other influence. Several national societies and many local societies demand the certificate of the Board as one of their entrance requirements. Because of the ability and character of those who have passed the Board, it has already rendered a most valuable service to the profession in raising the standard of the specialty. The Board looks into a man's record and training and then subjects him to both a practical and a written examina-

tion, covering the various branches of ophthalmology. While the primary purpose of the course given at Rush Medical College is not to enable the student to pass this Board, still the year's course meets its requirement. We are anxious that all of our students take the Board and we would feel chagrined indeed were any to fail in passing. Indeed the ideals which gave rise to the graduate course were the very same as those which have become the corner stone of the Board itself, namely *better ophthalmologists*.

Better preparation has to do with fundamentals. These include physical and mental health, a body capable of severe taxation of hours and days and weeks of close application, and a mind well trained during the undergraduate years and especially fitted for scientific and deductive reasoning. This does not mean that handicaps spell failure, but a student with a handicap will not advance as far per unit of effort as a student without one, whether it be mental or physical. A handicap reacts upon the instructor also, who naturally is more interested in assisting the A class student, than he is in a brother who must have the simplest matters elucidated.

These fundamentals include the mental preparation and training which a high grade medical college gives. This must be fortified by repetition of certain courses to the point of actual assimilation of those matters which form the A B C of the graduate course. Just which studies should one review, and how much time should one spend in their review? These questions require the advice and judgment of one who has weathered the storms; he may chart the channel which will lead the student to the goal. Therefore, a great responsibility rests upon the shoulders of him who would advise. If he should advise that embryology be omitted or that an easy course be substituted for a thorough review of general pathology, he will find his student without bed rock foundation. An advisor of integrity and character is then the first and most important consideration.

Recently a new and definite policy has been established by the University of Chicago toward the medical colleges, which means the continuation, indefinitely, of Old Rush Medical on the West Side. There are in the University four Medical Schools, two graduate and two undergraduate, one of each being on the South Side

*Read at the meeting of the Illinois State Medical Society, May 23, 1929.

and one of each on the West Side. Work may be taken in either school and credit given in the other.

This gives the student three most unusual opportunities to increase his knowledge, 1, in the fundamental sciences, anatomy, pathology, physiology, etc.; 2, an opportunity to do investigative work; and finally, there is an abundance of clinical material in the care of which he shares the responsibility.

Better training means more careful and exact teaching. It means greater attention on the part of the teacher; not more lectures, but more teaching. There is a vast difference between lecturing and teaching. Teaching is the act of assisting the student to acquire knowledge for himself.

For the benefit of the student in Ophthalmology, we may paraphrase Pope's well-known statement thus: "The proper study of Ophthalmology is the Eye." In studying ophthalmology the student needs personal contact in handling patients with ocular disorders. This is the only way he may acquire needful experience. If the acquiring of this experience is under the supervision of a taskmaster, the student grasps the opportunities and grows in knowledge and ability.

Therefore, we assert it is of paramount importance that the student have, under supervision, this first hand contact with patients.

In medical schools this contact may be had both in dispensary and in hospital. Let us examine the advantage of each. The greater bulk of eye patients are ambulatory, in fact, many are merely refractions. This is especially true in the practice of a young man who is just starting out in his specialty, and it is the big difference between the outpatient class and those who are confined to the hospital. It is with this class of patients that the student must be first and fundamentally instructed; for when he is setting up his own office, the way he handles the first few patients determines to a large extent his success in the community. It is on these outpatients he learns the necessity of vision taking, the value of fields, the meaning of a cloudy cornea or increased tension, the reasons accurate refractions must be done, and thorough intra-ocular examinations completed. He must learn routine procedures, so that they become second

nature to him. This gathering of information is the necessary groundwork in all further examination, should the patient later be confined to the hospital, or require extended treatment either in his own or in another department.

This training in routine methods is as necessary a preliminary to advancement as is the first year in medicine. The hospital training is also necessary but should this precede the dispensary the student develops false impressions as to the relative importance of cases; he is apt to become careless of those patients who do not require hospitalization; he is apt to hurry into an operative procedure without weighing the pros and cons. He does not appreciate the tremendous importance of the details worked out patiently and thoughtfully; nor does he seem so able to fit those findings together to make a diagnosis which is of far greater importance than the technique of treatment. It is infinitely more important to know when and why we should or should not operate for glaucoma or cataract than to know how to operate, important as that is. Let us take for example a cataract patient with 20/200 vision. If this can be improved with glasses to 20/30 or 20/40, the student must be taught that it is unwise to subject such a patient to an operation as a result of which there is a possibility that he may lose his eye!

His training must be so thorough that lax and superficial methods are trained out of him. He must be grounded in essential routine procedures so that he comes to despise lax and superficial methods.

In line with the above considerations we, at Rush Medical College, require the following fundamental courses to be taken during the first year of graduate study; a review of anatomy including the dissection of the head and neck, anatomy of the nervous system, embryology, physiology of the special senses, physiologic optics and general pathology. Under certain circumstances, some substitution may be made, as for instance when a student has formerly taught or assisted in the teaching of some of these courses.

These subjects are covered in the mornings during three quarters of the year. This leaves half of each day for the clinical training. The mornings then of three quarters are spent in

preparation, the afternoons in training. All of each afternoon is devoted to actual contact with the patients. This contact is supervised and directed. But the department considers that its most important problem of providing proper clinical training is to see to it that the work in the outpatient department is carried on in the best possible manner; for it is only in surroundings of this sort that the beginner is able to build up the proper background in clinical experience. To put the beginner in surroundings where there is only large clinical material and where the handling of the patients is *not* done with due consideration and to the best interests of the patient, cannot fail to develop false ideals in the students.

Our routine is as follows: For the first three months the student becomes familiar with vision taking, neutralization of lenses, preliminary examination of the patient, and the necessity of recording accurately all of his observations. The dark room work is stressed and he is inducted into retinoscopy and the use of the trial case. He is taught how to check himself by having the instructors or the older men go over his findings with him in a helpful manner; kindly criticism being routine. Attendance in the clinic given for undergraduates is required.

During the second quarter he becomes more proficient in his retinoscopies and refractions and he is allowed to suggest the glasses which should be ordered, to the instructor in charge of the dispensary. Field taking, tonometry, the use of the slitlamp and Gullstrand ophthalmoscope are explained and he is taught to use them, independently.

In the third quarter he is given responsibilities in the treatment of cases, and follows them into the hospital. Courses in muscle anomalies, minor operations, operations on pig eyes and histopathology are given. He is required to continue retinoscopy and refraction for two or three days a week. And he is invited to see the operations done at the hospital.

The last quarter is devoted to clinical work almost entirely. He is offered an opportunity to assist in the mornings in the private offices of one or another of the instructors or professors where he ostensibly fills the role of an assistant; but he is there to learn from observation how

patients are handled, how consultations are conducted and what and how patients are told those things they should be told. In the afternoon he is expected to take certain cases in the clinic and work them up thoroughly; to follow them through; to write them up (a few such cases are accepted by the American Board for Ophthalmic Examinations) to present them to classes; and to assist in conducting certain classes of undergraduates.

It has become evident that unless a stimulus is given from time to time the best of students are apt to become lazy. Therefore, quiz hours and lectures are deemed advisable. During such hours the students themselves often present papers either on their reading or on a bit of research. Case reports are reviewed. The students are urged to recognize their own and each others mistakes and suggest means of avoiding them in the future. Histology and histopathology of the eye are studied by contact with specimens and lantern-slide demonstrations. And these are continually linked up with the clinical aspect, thus vitalizing a subject which has all too often been neglected or ignored entirely.

Operative technique is taught in demonstration in the laboratory and operating room. The student is urged to take advantage of the animal laboratories to acquire and improve his technique and to do investigative work.

In a single year of graduate study one cannot become familiar with every branch of ophthalmology; indeed, it takes many years of study and painstaking endeavor to reach a satisfactory degree of proficiency. A further six months or year is urged on all who complete the year's study; many spend this time abroad. In addition three to five years' assistantship is of great value. Properly speaking the practitioner of medicine is always a student; no patient is studied by him, as he should be, without adding to his store of clinical knowledge. Many students get the wrong start in ophthalmology by working in institutions where the operative work is overly emphasized.

Note: I wish to acknowledge my indebtedness to Dr. William H. Wilder, Professor Emeritus, and Dr. E. V. L. Brown, Professor and Chairman, Department of Ophthalmology, Rush Medical College, University of Chicago, for their suggestions and kindly interest and help in organizing the graduate instruction.

INTRAVENOUS ANESTHESIA WITH SODIUM AMYTAL

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Various new forms of anesthesia have recently come into use. Intravenous anesthesia is perhaps the most recent form to be used on the human being.

Barbituric acid derivatives have been known for a long time because of their hypnotic qualities. Sodium amytal or sodium-isoamylethyl barbiturate is a readily soluble barbituric acid derivative whose anesthetic properties on animals has been proven when given orally or intravenously. In cats, rabbits and dogs, surgical procedures can be carried out by administering 45 to 60 milligrams per kilo body weight. This is about 50 per cent of the fatal dose when given orally. The sodium solution of proper hydrogen-ion concentration has been used in animals orally, subcutaneously, intramuscularly, intravenously, or intraspinally.

The hypnotics of the barbituric acid derivatives have marked inhibitory action on certain medullary and mid-brain centers.

Experience in the operating room has shown us that man is more susceptible to the drug, because surgical procedures can be carried out under a dose of 20 to 30 milligrams to the kilo body weight. It has also been found that certain individuals have a greater tolerance for the drug than others.

Inasmuch as there have been no reported fatalities, the lethal dose for man has not yet been determined. However, if we may compare the toxicity of sodium amytal to that of the other barbital derivatives, we might conclude that the surgical dose approximates 30 to 50 per cent of the lethal dose. If we might compare the factor of safety for man to that of the cat or dog, the lethal dose might probably be given at 40 to 60 milligrams per kilo body weight. Zefras and McCallum recommend 25 milligrams per kilo body weight (up to a total amount of 25 grains or 1.6 grams) as the maximum dose to be given intravenously for the production of surgical anesthesia. Lundy reports 273 cases in which sodium amytal has been used intravenously to produce all or part of the anesthesia necessary to

perform most of the various operations that are commonly done on man.

To date there have been no definite rules for the indications or contra-indications to the use of this drug. It appears, however, that its field of use is large. It is especially welcome to those patients who are apprehensive of the usual methods of inhalation anesthesia and who resent the psychic effect which usually accompanies local or spinal anesthesia. The drug may be injected before the patient goes to the operating room with no more psychic effect on the patient than would result from any intravenous injection. In about two or three minutes the patient drops off into a very quiet and "natural" sleep, without having gone through any suspicion of struggle or discomfort. He may then be taken to the operating room and placed in any position the surgeon may desire.

Pain, sympathetic excitement, worry and fear act antagonistically to the effect of barbituric acid derivatives and are therefore among the conditions which determine the marked individual variations in the analgesic and fatal doses. Central depression is synergistic and makes patients susceptible to the depressant effect of the barbituric acid derivatives. For this reason a hypodermic injection containing hyoscine gr. 1/100, morphin gr. 1/4 and cactoid gr. 1/60 is best administered one-half hour before operation to act in synergy with the sodium amytal.

The anesthetic drug is put up in ampoules containing one gram of the crystals. This is dissolved in 10 c.c. of sterile redistilled water, with a resultant clear solution. If the solution is opalescent, it shows a deficient hydrogen-ion concentration and should be discarded.

The solution is slowly injected into the vein at a rate not to exceed 1 c.c. per minute. Injection at a more rapid rate than this is conducive to respiratory embarrassment and may be followed by such complications as pulmonary edema or hypostatic pneumonia. It is found that in about two to three minutes the patient becomes drowsy and grows progressively more so until after five minutes the patient is entirely unconscious. During this period of induction the patient shows no signs of excitement or discomfort of any kind.

Different patients show a different amount of tolerance for the drug and it is found that twenty

to twenty-five grains (1.25-1.6 gm.) will usually produce complete surgical anesthesia. In view of the fact that the lethal dose is not yet known, it is recommended that 1.6 gm. be the maximum dose administered to any individual. If more relaxation is required than can be obtained from this amount of sodium amytal, a small amount of inhalation or local anesthesia may be added. Excellent relaxation is thus obtained for any kind of intra-abdominal surgery. Because of the normal respiration throughout, all pushing is eliminated.

It is found that the pulse, respiration and blood pressure are practically unchanged because of the drug. Tracings show that on the average the respiratory rate may be slightly increased, but the amplitude is decreased. Cynosis is not observed. It must be remembered that the tongue may drop back the same as with ether anesthesia. Slight increase in pulse rate is noticed when traction is made on the intra-abdominal organs. With the exception of one case on our series, the blood pressure curve remained about stationary throughout the time of operation.

We have used the drug for induction in the amount of one gram and found that fairly extensive operations could be performed with the addition of very small amounts of inhalation or local anesthesia. Full surgical anesthesia may be obtained by the use of larger doses (15 to 25 milligrams per kilo body weight).

The duration of the effects of the drug are quite variable. Following the use of 15 grains of the drug, the patients remain unconscious for periods ranging from one to four hours. Some patients arouse from their sleep in a very natural way, while others are "drunk." They toss about aimlessly and without co-ordinated movement, although no violence is displayed. They usually need constant watching until full consciousness is regained. A small percentage of the patients have a "hangover," which may last as long as three days. During this time the patient is semi-stuporous, although fully conscious. When they emerge from this "hangover" they usually do not remember what went on during this time, although they appeared fully conscious. To the observer this period seems quite disagreeable, but the patient does not seem to mind it so much. One of our patients had a three-day "hangover." She had previously been under three ether anes-

thesias. When asked which she would prefer in the future, she did not hesitate to give amytal the preference. Postoperative retching, nausea and vomiting are very seldom observed. The patients tolerate considerable quantities of fluids by mouth immediately after awakening. One of our patients took over 5000 c.c. of fluid by mouth and proctoclysis within 24 hours of an appendectomy. No nausea or vomiting resulted.

The restlessness which is experienced upon return to consciousness may, to a great extent, be controlled by morphin sulphate in doses of 1/6 grain P. R. N. Ephedrine sulphate gr. $\frac{3}{4}$ and caffeine sodium benzoate 15 gr. may be given intramuscularly for two doses three hours apart to hasten recovery by counteracting the effects of sodium amytal.

The limitations of this drug are still unknown. It seems apparent that it may be used whenever any other general anesthetic is indicated. It has the advantage that the patient may be placed in any position that the surgeon may require and that in certain operations about the head it keeps the anesthetist out of the operative field.

Sodium amytal has also been used in 0.25 to 0.50 gram doses to produce analgesia in the second stage of labor. It must be remembered that in obstetrics two individuals must always be considered. Robbins, McCallum, Mendenhall and Zefras report on 28 cases of delivery. They have used the intravenous method and come to the following conclusions:

1. "The most serious objection to the use of sodium amytal as an analgesic was the difficulty in controlling the patients who became very restless.
2. This drug has the advantage of being rapid in its action and of having a wide range of safe dosage.
3. There has been no evidence of harm to the mother.
4. Labor may be rendered practically painless.
5. Labor is probably not delayed.
6. Obstetric operative procedures are much more easily carried out under ordinary anesthetics when the operation is preceded by sodium amytal.
7. Danger to the baby has not been proved.
8. Prompt and complete control of eclamptic convulsions is possible.

9. As a general anesthetic agent for cesarean sections and other obstetrical operations and especially for patients having tuberculosis or toxemia of pregnancy, sodium amytal bids fair to supplant the inhalation anesthetics."

Drabkin, Ravdin, Hirst and Lapham have used sodium amytal by rectal administration in 30 deliveries and report excellent results in 13 cases. These patients enjoyed complete anesthesia throughout the delivery. The patients were quiet, apparently in deep sleep, but uterine contractions continued. Ten cases they classify as having good results. These patients moved or groaned some during uterine contractions, but between pains were quiet and relaxed. In seven cases the results were fair, the patients becoming noisy and unmanageable during pains. Two patients responded poorly. The uterine contractions disappeared while these patients were under anesthesia. We must remember, however, that even in unanesthetized patients it is not unusual to have the pains disappear.

The fetal heart rate was unaltered in every patient under anesthesia. The force of the uterine contractions was diminished in two patients who subsequently delivered while under anesthesia. Contractions completely ceased in two patients who recovered from the effects of the drug and were subsequently delivered. Two babies were slightly asphyxiated. Both of these were in difficult deliveries. In the remainder, the babies cried lustily when born.

Lundy reports the use of sodium amytal by mouth in at least twenty cases of hiccough in which previously every known remedy had been tried. Its oral administration together with carbon dioxide and oxygen gave good results. He has also used it with satisfaction in postoperative psychosis, spasm of the facial muscles following surgery of the brain, severe burns, gastric crisis of syphilis, tabes dorsalis and severe generalized pruritis from jaundice.

In the cases which are here reported, the following routine was carried out:

One-half hour previous to going to the operating room the patients were given a hypodermic containing hyoscine gr. 1/100, morphin gr. 1/4 and cactoid gr. 1/60. Just prior to operation 1 gram of sodium iso-amylethyl barbiturate was given intravenously.

Following the operation the patients were given morphin gr. 1/4 P. R. N. to allay the restlessness. Ephedrine sulphate gr. 3/4 and caffeine sodium benzoate 15 gr. were given intramuscularly for two to three doses, three hours apart, to hasten recovery.

Case 1. Mrs. B. aged 35, giving a history of previous pulmonary tuberculosis, weight 146 lbs., was operated on for removal of a chronically infected gallbladder. Preoperative temperature was 98.6, pulse 76, B. P. 120-68, R. B. C. 4,240,000, W. B. C. 10,000, Hg. 80%. During the operation the B. P. ranged from 114 to 128 systolic. Pulse ranged from 76 to 110. At the end of the operation it was 90. Respiration varied from 18 to 28. It required 1/8 lb. ether during the time of operation. Anesthesia was started at 9:00 a. m. and the patient regained consciousness at 6:15 p. m. Convalescence was uneventful. There was no vomiting at any time.

Case 2. Mrs. McM. aged 29, having a diagnosis of carcinoma of the cervix uteri, weight 116 lbs. General condition fair. Classed as surgical risk B. History and physical findings negative except for the carcinoma. Total hysterectomy was performed. Preoperative temperature was 98.4, pulse 110, respiration 20, B. P. 118-82. R. B. C. 3,350,000, W. B. C. 9,800, Hg. 65%. During the operation the B. P. varied from 118 to 134 systolic. Pulse ranged between 120-134. Respiration 18 to 40. Respiratory rate went up during breaking of dense adhesions. 1/6 lb. of ether was used during the course of the operation. The amytal was given at 11:00 a. m. and the patient regained consciousness at 2:15 p. m. There was no nausea or vomiting at any time. Convalescence was uneventful.

Case 3. Mrs. D. aged 29, weight 111 lbs. Submitted to a subtotal hysterectomy for the relief of uterine bleeding. Laboratory report showed beginning carcinoma of the fundus. History and findings were normal except for the uterine findings. Preoperative temperature was 98.6, pulse 108, respiration 26, B. P. 112-70, R. B. C. 3,520,000, W. B. C. 11,000, Hg. 60%. During the operation the pulse ran between 118 at the beginning to 86 at the end of the operation. Respiration was between 26 and 22 B. P. from 100 to 120. 1/12 lb. ether was used during the course of the operation. There was slight postoperative nausea and the patient vomited once. The operation began at 10:00 a. m. and consciousness was regained at 12:30 p. m. Convalescence was uneventful.

Case 4. Mr. L. aged 15, weight 115 lbs, was admitted to the hospital with an acute appendicitis. His general condition was very good. Pulse, respiration and B. P. were normal, R. B. C. 4,950,000, W. B. C. 12,650. This patient did not respond very well to the amytal and it required 1/4 lb. ether to complete the operation. Tonsillectomy was also performed at the time. The anesthetic was administered at 8:30 a. m. and consciousness was regained at 3:00 p. m. There was no nausea or vomiting. Convalescence was uneventful.

Case 5. Mrs. S. aged 24, weight 115 lbs, was admitted for the repair of a third degree laceration (perineal). This patient had a cardiac arrhythmia with mitral systolic murmur. She had an appendectomy in 1926, a nephrectomy for relief of hydronephrosis in 1927, and a very difficult labor with third degree laceration in July, 1929. She was classed as surgical risk C. Urinalysis was normal. Temperature 99, pulse 130, respiration 22. During the operation her pulse varied from 130 to 140, respiration from 20 to 30, B. P. from 90 to 60 systolic. $\frac{1}{8}$ lb. of ether was required during the course of the operation. Operation was started at 9:00 a. m. and consciousness was regained at 1:00 p. m. There was neither nausea nor vomiting. The patient remained in a stuporous condition for three days. When her "hangover" subsided, she did not remember the things which had happened during these three days. When asked what type of anesthetic she would prefer in the future, she gave sodium amytal first choice.

CONCLUSIONS

1. Intravenous anesthesia with sodium amytal is still to a certain extent in the experimental state and, while it must be used with caution, has apparently a large margin of safety.
2. This form of anesthesia promises to be of benefit, especially in certain types of cases where other anesthetics are contra-indicated.
3. The period of unconsciousness seems to tide the patient over that period of vomiting and distress which usually follows ether anesthesia.
4. It will probably be necessary to find something that will neutralize the action of sodium iso-amylethyl barbiturate before the full benefit will be derived from this drug.
5. Sodium iso-amylethyl barbiturate has a wide field of general usefulness.
6. During the first postoperative day, patients who have had sodium iso-amylethyl barbiturate require more watching and nursing care than with other anesthetics.
7. Because of the complete relaxation, respiratory obstruction caused by a dropping back of the tongue must be guarded against.

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State Trust Building.

PRELIMINARY REPORT OF A NEW OPERATION FOR RECURRENT DISLOCATION OF SHOULDER WITH CASE*

EDSON B. FOWLER, M. D., F. A. C. S.

CHICAGO

The ideal operation for ordinary uncomplicated types of recurrent dislocation of the shoulder should follow physiological laws, as far as possible, should reinforce the damaged capsule effectively, be reasonably simple, require a short period of disability, and should give a permanent cure with perfect function in practically all cases.

The literature has many operations for this condition, no one of which fulfills all of the requisites. In an effort to work out something better, numerous operations were done on cadavers and the most promising performed on the case here reported.

The patient, subject to recurrent dislocations, was placed on her back with the arm to the side and the shoulder to be operated on slightly elevated. An incision was made 3 inches long over the coracoid parallel to the fibers of the deltoid which were separated, exposing the coracoid and anterior portion of the capsule of the shoulder joint. With a curved hand reamer, shaped like a shoemaker's sewing awl, a quarter of an inch hole was drilled in the coracoid about half an inch proximal from the tip. A second incision was made over the posterior lower portion of the acromion, approximately parallel to the fibers of the deltoid, which were separated for a distance of about $2\frac{1}{2}$ inches distally from the border of the acromion, through which a quarter inch hole was drilled with the curved

*Read before the Illinois State Industrial Medical and Surgical Society, May 20, 1930, at Joliet, Ill.

reamer passed upwards from underneath. The capsule of the joint was then opened half an inch at the mid-anterior portion. Through this slit was passed a carrier made for its flexibility from a rod of string solder, in one end of which had been cut an eye one inch in length. The carrier was passed inside the capsule around under the neck of the humerus, and out through the capsule mid-posteriorly. The guide was left *in situ*, and the field temporarily covered. Next, a strip of fascia lata (the long peroneal tendon also is good) three inches wide and as long as could be easily obtained, was threaded in the eye of the carrier and pulled through. Each end of the fascial rope was passed through the respective drill holes, and with the humerus abducted 90 degrees the fascia was drawn taut, turned back upon itself (from 2 inches to 2½ inches) and very securely sutured with No. 2 chromic gut. The fascia was sutured also at the two exits from the capsule. The subcutaneous tissue overlaying the deltoid was closed with a running suture of fine cat gut, and the skin closed with buried silkworm gut suture to avoid disfigurement. The arm was kept in a sling ten days, after which use of the arm was encouraged, so that at the end of eight weeks there was practically no limitation of motion, and function was normal.

The patient, a teacher of physical culture, says she has a feeling of security in the shoulder joint. She can dive, swim under water, and do "everything" with the shoulder that she could before the original dislocation five years ago.

SCURVY: REPORT OF A CASE

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CHICAGO

The relative infrequency of scurvy at the present time prompts the report of the following case. It presents some interesting x-ray findings, such as visible subperiosteal hemorrhages, which Schwartz¹ mentions as occurring comparatively infrequently roentgenologically.

The patient, a male child of 13 months, was first seen in October, 1927, because of extreme irritability and increasing capriciousness of appetite, the parent attributing the symptoms to trauma sustained when the child in falling from a table, was seized by the right arm. At that time, general ex-

amination proved negative, there being no discernible pathology in the right upper extremity.

On November 28, 1927, the appearance of a sudden immense swelling of the entire upper right extremity, alarmed the mother, and again the physician, who originally saw the child, was consulted. Child was poorly nourished, pale, whimpering continuously, a worried expression on its face. It lay on its back and any attempt to touch it, met with increased crying. The respirations and pulse were rapid, the temperature, 101, rectally. Except for the rapid tones, examination of the heart was negative, as was also that of the lungs and abdomen. There were no teeth, the gums were blue-red, and swollen. Otherwise, the oral and naso pharynx presented no particular findings.

There was an epiphyseal enlargement of both the



Fig. 1. Epiphyseal Separation with the evulsed fragments.

ankles and wrists, and some beading at the costochondral junction of the ribs. The diagnosis of rickets was apparent, the typical rachitic changes showing up well in the x-ray. Confining our attention to the right upper extremity, the shoulder, arm and forearm, were swollen to three times the normal size. Edema was present, and there was a bluish discoloration about the shoulder joint. The child was unable to move its arm, giving the appearance of an apparent paralysis. Our effort to manipulate the arm was met with marked shrieking. The pseudo-paralysis suggested a Parrot's of congenital-lues, which was at once ruled out, because of the usual appearance of that condition before five months.

Upon questioning the mother, as to the history of the child, nothing pertinent to the present condition was obtainable, except the fall of a month past. Parents insisted child was receiving proper feeding, including due share of cod-liver oil and other vitamin containing foods.

1. Schwartz, A. B.: Epiphyseal Changes in the Diagnosis of Scurvy. *Am. J. Dis. Child* 34: 765 (Nov., 1927.)

Child was sent to the hospital where large doses of orange juice were administered, as well as whole cow's milk. Laboratory tests revealed a secondary anemia, mild leucocytosis, a negative Wassermann, a trace of albumin in the urine, with moderate number of red blood cells. Blood was not present in the stools.

X-ray a day after admission (Figure 1) showed



Fig. 2. Subperiosteal hemorrhage with arm in sling.

an epiphyseal separation of the shaft of the right humerus, with the interposition of two evulsed fragments. The x-ray findings were surprising, in so far as we expected to find the typical scorbutic picture. Picture taken a week later (Figure 2) showed clearly the marked subperiosteal hemor-



Fig. 3. Beginning calcification of process.

rhage. Child's arm was put in a sling and in seventy-two hours after the therapeutic trial with vitamin C, phenomenal clinical improvement was noticed. The appetite increased, the fever decreased, the hema-

turia was no longer present. The child's mental attitude improved rapidly, it being cheerful and happy now, and no longer objected to being touched. After three weeks in the hospital, a one hundred per cent change was obvious. Two teeth erupted and two were in the process of eruption. The child gained weight, and could now sit and stand. Figure 3 shows very plainly the beginning calcifi-



Fig. 4. Further calcification and absorption.

cation of the hemorrhagic area. Figures 4 and 5, taken at intervals of one month, show further calcification and absorption of the process.

Child was seen on April 8, 1928, a period of 4 months later, certainly a different child. As has been pointed out by Hess,² the improvement clinically occurs rather quickly, whereas the changes in



Fig. 5. Further absorption.

the osseous system lag behind for months, and even longer. At present the infant is receiving in addition to proper feedings, ultra-violet therapy.

2. Hess, A. F.: Infantile Scurvy in Abt's, I. A., Pediatrics.

3. Schwartz—in article quoted above.

COMMENT

A rather severe case of scurvy is presented with prompt clinical improvement following the institution of proper therapeutic measures. The effect of trauma in causing epiphyseal separation and sub-periosteal hemorrhage in a previously clinically unrecognized scurvy is unquestionable. The first x-ray threw some doubt as to the conclusive evidence of a scorbutus. It might be mentioned that roentgenograms of the other bones proved negative except for the rickets. X-rays will be taken from time to time, to bring out the "pale inset"³ that remains in the epiphyseal body after the scurvy is healed. This inset represents the original epiphyseal structure present during the height of the acute scorbutic manifestations.

9 South Kedzie Avenue.

UNUSUAL CLINICAL EXPERIENCES IN THREE CASES OF MAXILLARY SINUSITIS*

C. HOPKINS LONG, M. D.

CHICAGO

Infections of the accessory nasal sinuses are widespread. Many persons suffer for years from what they suppose to be common colds, and treat themselves with the various nostrums which are on the market. After many years of this practice some of them finally consult a specialist, and then learn for the first time that they are suffering from infected sinuses. Most of these cases yield readily to proper treatment; some however, present unusual aspects and are of special interest. I desire to present to you the details of three cases which I consider of great interest.

Case 1. A. E., a woman about 37 years of age the mother of two healthy children, and herself in excellent health, save for a chronic headache attended by sneezing; cough; purulent nasal discharge; hawking and spitting.

A diagnosis of empyema of the right antrum was made.

Nothing of the x-ray was known at the time and I had no apparatus to use the transillumination test. Specialists were too remote to consult.

My knowledge of the diseases of the eye, ear, nose and throat was about the same as our family physician of the present day. I had one text-book which treated of these special organs entitled "The American Text-book of the Eye, Ear, Nose and Throat."

It had been expressly written for the needs of the busy practitioner. The subjects were presented by the great teachers and writers of that period.

Dr. John O. Roe of Rochester, N. Y., remembered for his forceps used in operating on the nasal septum, described in one of his articles in this book the alveolar process operation which I used.

The first molar tooth was extracted, pus following the tooth. The tooth-socket was increased in size. A hydrocele canula of proper length was prepared and inserted into the cavity of the maxillary sinus.

The canula was retained in position by a silk thread fastened to its cuff and tied around the adjacent tooth. Direct free drainage was established for the sinus.

Nature promptly commenced repairs. The artificial opening began to close, and canulas of smaller size were employed.

In the course of time a rubber tube was substituted for the silver, and very soon this was introduced only with difficulty. Finally the tube disappeared altogether. A strong suspicion was in my mind that the patient had thrown it away because she believed that her recovery was assured.

Eighteen years later the patient informed me that six years after the operation a piece of tube was discharged from the nose and that her sinus had not given her any further trouble.

Case 2. M. L., aged 36 years; physician; frequent head colds; nasal obstruction; deflected septum; swollen turbinates. This patient had been using a solution of cocaine to reduce the nasal obstruction, but, realizing the danger of acquiring the cocaine habit, he finally consulted a nose and throat specialist, who used an electric cautery to reduce the turbinate congestion and relieve obstruction; this gave partial relief for a time.

Later the middle and inferior turbinates were operated upon; acute frontal sinusitis followed. This was perhaps due to the packing period of five days.

This occurred in 1906. Two years later he suffered from an attack of acute maxillary sinusitis, but a few irrigations of sterile water with the Lichwitz needle through the inferior nasal wall resulted in relief. Since then he has suffered from one to four attacks annually, generally following head colds or influenza.

The canula, through the normal opening, is now substituted for the needle. This patient has steadily refused to submit to more radical procedures, notwithstanding the pain and inconvenience of having had the palpebral fissure flooded with blood from the needle puncturing the lachrymal duct, at one time missing the antrum altogether and perforating the cheek instead.

Case 3. M. C., widow, aged 37 years, mother of three children, two of whom exhibited nervous tendencies. This patient came to me with such numerous complaints, involving pain in the throat, head and jaw-bone, together with extreme nervous tension and excitability, that I rather suspected she had mistaken me for a neurologist instead of a rhinologist. However, I realized that a nervous person was really a sick person, and that definite and effective treatment could not be given this particular patient until knowledge of

*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 22, 1929.

her disordered system was better and more thoroughly understood.

She had been left with the care and worry of rearing and providing for a family of growing children, receiving some financial aid from a brother-in-law. This man suddenly died, and with much fear and anxiety she was forced to assume the burden alone. The anticipated reaction occurred, nervous tension led to exhaustion and constant physical ills and complaints. Among these a persistent trifacial neuralgia caused excruciating agony. She had been advised to have an operation (Mayo Clinic) on Gasser's ganglion, but declined to do so, choosing rather a less hazardous treatment, namely, alcoholic injections into the sensory division of the ganglion. Although this seemed to have been partially successful, she refused further injections of alcohol and was treated with drugs, such as tonics and sedatives. (Dr. Julius Grinker, of Chicago.)

Examination: Her appearance conveyed the impression of mental and physical distress. The right side of the neck was scarred and discolored from operations on the cervical glands. The right side of the face, especially the chin, seemed slightly larger than the left side; the right palpebral fissure somewhat narrower than the left; the throat indicated much irritation; the tonsillar spaces gave evidence of chronicity, such as patches of lymphoid tissue, pockets, and granulations. In fact, her throat-condition seemed the chief trouble for which she sought my advice. The proper treatment was applied to the throat, and a close examination was made of the eyes, ears, and nose, to discover evidences of infection other than the throat.

Eyes: Normal in appearance.

R. V. 20/25.

L. V. 20/25.

Sept. 30, 1926.

R. V. 38c 45 20/15.

L. V. 38c 135 20/15.

Add 2.50 for near.

Ears: Normal.

Nose: The sinuses were explored for infected foci. The frontal, ethmoidal, sphenoidal, and left maxillary were normal. The right maxillary chamber contained an abundance of muco-purulent yellowish-gray fetid secretion. She was advised to try the so-called irrigation treatment. The Pierce canula was readily introduced through the normal meatal passage. The result of this treatment not proving successful, she was persuaded to submit to the radical Caldwell-Luc operation. On November 23, 1926, she was admitted to the Chicago Post Graduate Hospital, where under a general anesthetic she was operated upon. In about ten days, the antrum discharge diminished greatly, there being no apparent source of disturbance.

Shortly after, however, she appeared at the office suffering from an attack of obstructed nasal breathing a sensation of strangling and smothering, a constant desire to swallow, a peculiar tone of voice, inability to sleep (owing to the nasal obstruction), a fullness and clicking in the ears. This condition would continue for several hours when unexpectedly all distressing symp-

toms would subside, and would remain quiet for a time, and then the process would be repeated.

The foregoing symptoms, she said had begun some two days before, and were continuing at irregular intervals. On examination it was found that the soft palate was in close contact with the nasal pharynx, but not adherent to it.

A solution of 10% cocaine was applied to the nasopharynx; a soft rubber catheter was looped about the anterior part of the septum, the ends of which were brought out of the mouth and pulled up, forcing the soft palate from the pharynx; this gave immediate relief and established free nasal breathing. Further investigation disclosed no other obstruction. Relief was only for a few hours when the palate muscles relaxed to their former position to remain until exhausted. Since that time there have been frequent recurrences.

From this evidence it follows, we are dealing with hysterical spasm of the soft palate excited by the shock of an antrum operation in a neurasthenic individual whose system was saturated with the toxins from a long standing suppurating maxillary sinusitis.

Treatment seems of slight benefit. In 1876, Dr. S. Weir Mitchell in discussing the subject of "functional spasms of muscles" refers to this condition as being obscure and its relief as hopeless. He says the spasms are caused by reflex influences such as excessive jars, clonic or tonic local spasms, and an over-excited state of the motor centres; there is an unusual discharge of nerve-force or the muscle itself has become the means, by its over-use, of hypersensitizing the sensory center which takes record of its activities. So that from this center at times excito-motor impressions are radiated onto near or remote centres and result thus in spasm.

Comments on Case 1. Case one illustrates perhaps the general practitioner's inexperience in his choice of operation.

The drainage following the extraction of the tooth resulted in a very rapid recovery. This would indicate that the infected tooth was the chief factor in causing the sinusitis. The extraction of the tooth was proper, but when we sum up the objectionable features of the alveolar process operation, such as food entering the sinus cavity from the mouth; rapid closing of the open socket; the danger of losing the drainage-tube into the larynx, esophagus or sinus chamber; the experienced rhinologist would prefer making a hole in the lateral nasal wall.

This is a simple effective operation, successful in the majority of antrum infections, allowing perpetual drainage if the hole is kept open.

Comments on Case 2. We have in this case, two conditions that require careful examination and consideration.

The deflected septum projecting into one naris and the overworked intumescent turbinates in the other prevented nasal breathing. The shrinking and contracting properties of cocaine hydrochlorate rendered relief and comfort for the time being, but the peril of acquiring the cocaine habit made continued use of this treatment dangerous.

The nasal septum should have been straightened instead of removing the turbinates. The prolonged packing caused infection of the frontal sinus. By the absence of the modifying function of the turbinates, perhaps the antrum was thereby rendered more susceptible to infection.

The patient should submit to a partial resection of the lateral nasal wall, preferably beneath the inferior turbinate, to establish drainage and thus eliminate retention of secretions in the acute stages of nasal inflammations.

Comments on Case 3. This patient was interesting. We had concluded her condition was properly diagnosed, the proper treatment had been applied, and a successful result should follow the radical sinus operation, but we were disappointed. We had not counted on a toxic system nor the shock of an operation in a neurasthenic woman, that was to be followed by that rare condition a cramp of the muscles of the soft palate.

In reviewing our knowledge of this subject, I was surprised to find that it had received much attention and had been very exhaustively studied during the nineteenth century. In the meanwhile, few cases are published and excite little interest, except for their cause and rareness.

1. Sir Felix Semon reports a number of cases of spasm of the palate accompanied by clicking noises in the head.

2. Lambert Lack, in 1901, collected all previous recorded cases and classified them according to cause. He said: "The prevailing cause in the severe cases was a gross lesion of the central nervous system. The mild cases were of reflex origin or apparently due to some small local lesion e. g. post-nasal catarrh, pharyngitis-sicca," etc.

3. Herbert Tilley referred to a case caused by a carriage accident.

4. Wright and Smith, authors of a text-book (1914) refer to spasms of the pharynx as due to hysteria. Page 441.

5. G. A. Garry Simpson reports clonic spasms due to shock from death of a brother.

6. Professor Bernhardt, in 1899, in a clinical lecture on "cramp or spasm of the soft palate," claims these cases are of anatomical interest as well as neurological, because the exact nerve supply of the palate muscles, as yet is in doubt, although strenuous efforts have been made to solve this question. Today, thirty years later, we are about assured by the last edition of Cunningham's anatomy that the 9th, 10th, and 11th cranial nerves are more or less responsible; that the facial or 7th nerve, which has been erroneously quoted heretofore as innervating the muscles of the soft palate should have no place in the literature of the present time.

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THE WOMAN'S BILL OF RIGHTS*

E. G. C. WILLIAMS, M. D.,

DANVILLE, ILLINOIS

Under our basic law and its several amendments, all citizens of our country are guaranteed the rights to life, liberty, and the pursuit of happiness. But in the application of this guarantee the enforcement of a natural law steps in to nullify part of the rights of many of our women citizens. While they are permitted to live on, they are denied liberty for periods of time aggregating from five to ten weeks in each year. They are denied the privilege of taking place in our social and business world for which they are fitted, because of the knowledge that they will be virtually imprisoned several weeks out of each year. I will cite two cases.

Case 1. Nature et al, vs. Mrs. D.

On September 25, 1926, Mrs. D. while not under oath, but of her own free will made the following deposition. She was in tears and could hardly talk: "I am the most unhappy woman in the world. I have a good husband and a fine 9 year old son. I am 39 years old. I have wealth, position and the respect of my friends, but I am not permitted to enjoy these blessings. Under the law of the months I am condemned to spend about ten days of each month in bed and during the remaining time am hardly able to be about. I cannot go places with my husband and son and they cannot be expected to stay here all of the time and have to go without me. I am a prisoner in my home. I am indeed miserable."

The details surrounding the imprisonment were investigated. Her case was called up for review. She was paroled and then given entire freedom. On Christmas Day, only three months later, we received the seasons greetings, from "The Happiest Woman in the World."

Case 2. Nature et X-Corporation vs. Miss J.

A review of the record shows that Miss J. at the time of the hearing was aged 38. She was the business type, an able-minded, clear-thinking, crisp-speaking woman. Quotation from voluntary deposition: "I have been an employee of X-Corporation for 16 years. At present, I am secretary to the president. If I had had full liberty during the entire year, I would be general manager for the company. But as I am a prisoner under the natural law for about four days each month I cannot perform the duties of manager as that requires

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attendance to business every day. I have no intention or thought of marrying. I have chosen a business career. I want release from this prison sentence so that I can complete my career."

Three months were taken in getting a complete release for the prisoner. Within the following year a letter was received from X-Corporation signed by Miss J., general manager.

These two paraphrased case reports are given to call attention to some aspects of menstrual disturbance, which are not generally given due consideration by the medical attendant and open the road to the discussion of the medical, sociological and economic sides of the production of voluntary artificial menopause.

The scientific side of the production of artificial menopause by gamma and x-radiation has been discussed in our meetings many times and our technique for the procedure is rather well established. A review of my own work shows that a complete menopause is usually produced by an amount of radiation that will give a saturation dose of 600 R at the depth of the ovaries, and that this is accomplished in most cases without the nervous and mental disturbances that so often follow surgical castration. The process is effective, relatively simple and satisfactory. The phase which I wish to bring into this discussion is that of the selection of cases and may be opened by asking a question:—If a woman has a menstrual disturbance which is preventing her from leading a comfortable and useful existence, is it her privilege to go into a voluntary menopause, or should she be required to wait and let nature take its course?

Of course, the question of birth control looms big and dangerous. I have never had a young woman or a nullipara without definite pathology apply for this treatment, and you may be sure such cases would not be considered, as I have little patience for the one who merely wants an insurance against normal pregnancy.

The factors of health and happiness are always considered and many conditions present themselves which make the procedure advisable and necessary. A tuberculous woman whose life would be endangered by pregnancy and whose recovery is retarded by the catamenial losses is considered a proper case. Several of this type have been given complete menoschesis, while in some only a menolipsis has been attempted. A woman with a coxalgic pelvis who had barely

survived two cesarian operations was believed to be entitled to relief from further danger. A woman, aged 34, with chronic nephritis, two children, and a mental disturbance, was relieved of further worry about pregnancy and her mental pathology disappeared.

Cases where there are three or four children and where the home life of the entire family is being upset and destroyed by repeated pregnancies are given careful consideration before treatment for sterilization and production of menoschesis is refused. In many of these cases I have found definite pelvic pathology.

Obviously, each case must be accepted for treatment on its own merits, and the attitude of the physician, who is a true minister to the needs of his people, must dominate everything else as judge. Charity, Sympathy, and Common Sense must sit in turn in the witness box and must be considered as competent witnesses. Let the old catamenial law be tempered with reason and administered with justice to the patient and may we discuss freely and openly the adding to the woman's bill of rights a provision that it is the privilege of any woman to voluntarily enter the climacteric if her catamenial status is detrimental to her happiness, health, or community usefulness.

DISCUSSION

Dr. Harold Swanberg (Quincy): We have grown accustomed in radiological circles to always expect something original from Dr. Williams, and he seldom disappoints us. He always expresses himself in an interesting and "different" way, which I am sure is appreciated.

I think the average radiologist does not realize the fact that there are thousands of physicians in this country who do not appreciate what radiation can do in the control of the menopausal conditions. If we, by some mysterious way, could get the message that Dr. Williams has given us today, over to the vast mass of general men and general surgeons, we would all be kept quite comfortably busy for sometime to come.

I think the day is coming in medical practice when the physician will no more consider the treatment of a menopausal hemorrhage *without radiation therapy*, than he would consider the treatment of diphtheria without the use of antitoxin. Of all the conditions we are called upon to treat from a radiation standpoint, I don't know of anything that offers us a higher percentage of satisfactory results, than the treatment of menopausal hemorrhage, which exists in most cases, without definite pathology.

It seems to me when we know what we can do and have proven it (every man who uses either x-ray or

radium knows of these results), we have no apology to offer. It is, therefore, just a matter of educating the profession. And surely, from the standpoint of a patient, she would much rather accept the treatment we have to offer than that which the average surgeon advises. So it is up to us to get this message over by some manner or means. I don't think it makes a great deal of difference in these patients whether we use x-ray or radium to carry out the necessary therapy. Both agents are equally effective and the patient who is prejudiced against going to a hospital, can have the work done in the office of the radiologist. Those who prefer to have it all over in one treatment can go to the hospital and have radium applied. In over ninety per cent of the cases, they will never experience further hemorrhage.

Dr. Edward S. Blaine, Chicago: This is a phase of x-ray therapy that I have been trying to stimulate for quite a long time, a matter of years, having learned of the almost specific effects of radiation therapy in European gynecological clinics years ago.

We have repeatedly called the attention of the medical fraternity to the great value of x-ray therapy as a real benefit to women who are disturbed in this particular way. After several years of this attempt, I do not see that a great deal of progress has been made. Evidently the average American physician and surgeon is a doubting Thomas. In European gynecological clinics, radiation therapy is routine in menstrual disturbances and associated conditions of the female pelvic organs. It is always thought of first, while here in America, it is thought of last or not at all. It is a successful treatment in the majority of cases. I cannot understand the failure of our doctors here to appreciate its benefit.

Dr. I. S. Trostler, Chicago: I have had quite a little experience in this particular line. I have been using this method for upwards of ten years. A year ago, those who were at the meeting of this section in Chicago may recall my remarks at that time.

I stated at last year's meeting that a woman came in to see me who had had a menopause produced by me ten years ago. For the benefit of those interested, I will give you the particulars. Mrs. H., aged twenty-six, para—IV, mother of two living children, suffering from a moderately advanced pulmonary tuberculosis and mitral regurgitation, was referred to me in March, 1918, by a very careful general practitioner for sterilization. I insisted that we have a heart and lung specialist see her, and after the latter had agreed with the diagnosis I proceeded to produce a roentgen castration. She received, from March 6, 1918 to May 7, 1918, a total of three hundred milliamperes minutes at 140 kilowatts, ten inches, F. S. D. 3 aluminum filter. I believed at that time and still believe that the moderate dosage is preferable to the high voltage x-ray on the ovary.

Her last menstruation, before beginning the treatment, occurred February 25-30, 1918; March 20-25 she had a very profuse period; April 22-25 she flowed

considerably less than normal, and on May 19 she had just a show of blood.

The patient called to see me on July 10, 1918, and reported she felt well and had not menstruated since she last reported.

On May 10, 1928, this lady called to see me and appeared to be considerably perturbed. She informed me that she had begun to menstruate the day before. She looked well, and I assured her everything was all right, and directed her to see me again in a few months. Since that time, she has been menstruating regularly every twenty-eight days. She appears to be well and in every way normal, after a complete amenorrhea for ten years, lacking ten days. She has put on considerable weight. Her heart is regular and there is no auscultatory evidence of the mitral regurgitation. She stated she had been quite active sexually during the past ten years and was in every way normal. She asked me to give her more x-ray therapy, but seeing no good reason to do so, I am putting her off month after month and am trying to lose track of her.

She is afraid she may become pregnant. I am anxious to see whether she will become pregnant. She is exposed, naturally, being a married woman.

Dr. James S. Archibald (Decatur): I don't know whether Dr. Blaine's campaign is reaching the public. During the last two months I have had two people come to my office, asking me to sterilize them, with absolutely no history of any trouble, not sent by any physician. I turned both down. That is what we are going to be worried to death by, these people wanting to be sterilized.

Dr. Henry Grote, Bloomington: This is a very interesting subject, not only interesting but a big subject, the biggest subject relative to the welfare of the whole race. We are beginning to see now the offspring of those who were subjected to x-ray twenty or twenty-five years ago.

I happen to have in my records the children of women who were subjected to comparatively large doses of x-ray twenty-five years ago, who were sterile, or at least they did not menstruate for from one to three years. The offspring of these young women today are normal. The oldest one happens to be seven years of age.

I think somehow or other these reports should be followed up for future meetings.

Dr. E. G. C. Williams (closing the discussion): The selection of cases is the whole thing. You will get people who merely want sterilization because they do not want to go through normal pregnancy. I will go back to the last statement, that common sense must sit as one of the competent witnesses, and our attitude as physicians must predominate.

So far as the future effect on the race, I figure a pretty complete job when I am through, and so far as these individuals are concerned there is not to be any future race, because what is wanted is a complete stoppage of menstrual life. It certainly gives us a class of people who are among the happiest patients that we have.

RECTAL OPERATIONS—THEIR SYSTEMIC EFFECTS*

P. F. JAMES, M. D.,

PEORIA, ILL.

In discussing rectal operations and their general systemic effect, we are getting at the subject matter in reverse order, but there is an object in view in taking up the subject in this manner. Rectal conditions or rectal pathology that require operative procedure often produce effects entirely unlooked for. This is no doubt due to our inability to connect some of the symptoms complained of by the patient, and which symptoms are relieved (following the rectal operation) with the rectal pathology. In other words, if we could and would thoroughly analyze our cases, we would be able to foresee relief of these symptoms following the rectal operation and to directly connect the two.

Several years ago at a medical meeting in Chicago, the then unknown and unusual statement was made setting forth the fact that a focus of infection in one part of the body might be responsible for the chronic inflammation or infection of some distant organ or organs. Dr. J. B. Murphy, upon hearing this startling statement, said, "This is an epoch-making discovery and will revolutionize our ideas of diagnosis and treatment of obscure infections." Since that time it has been definitely established that a small focus of infection might destroy the patient. The dentists have taught us the important lesson of focal infection in connection with teeth and it has been a very valuable one. A small area of infection at the root of a tooth often causes severe systemic disturbances. The nose and throat men have taught us to look for the source of infection in the tonsil, and this has been a valuable lesson. Many obscure cases of so-called rheumatism have gotten well and remained well, after the removal of an apparently normal tonsil. It is true that many teeth, and not a few tonsils, have been sacrificed to no avail in our enthusiastic search for hidden foci of infection. Still progress has been and is still being made along these lines. Now, if a small abscess at the root of a tooth, or a small abscess in the crypt of a tonsil, can and does cause so much systemic disturbance by meta-

static infection to other parts, what would one expect from an infected area of several square inches, as often occurs, in rectal cases? The average practitioner who diligently seeks for foci of infection in the teeth or tonsils does not even take the trouble to examine the rectum, and if the patient complains of rectal trouble, the physician gives him a pill to clean out his bowels and imagines that he has done his duty towards the patient. This is not the fault of the general practitioner, but the fault of the proctologist for his lack of teaching ability. The dentist the nose and throat man, have taught the profession to look for and discover sources of infection in their fields. We, the proctologists must do the same.

There is a direct column of blood, an inverted cone so to speak with the base at the liver and the apex at the rectum. Imagine the effect of septic absorption into the blood stream at the rectum. This infection is carried to the liver and there destroyed if the liver is able to destroy it. All that is not destroyed by the liver is ready for metastatic infection to the different organs of the body.

In discussing the systemic effects that follow a successful rectal operation for any condition, we must get back and simply review the symptoms produced by the original condition. One cannot expect to cure all ills by operating on the rectum, but many times effects are produced by the operation which the patient nor the physician connect in any way with the pathology present. We are, perhaps, more often surprised in treating anorectal fistula than in any rectal condition. The manifestations which usually precede anorectal fistula cause more acute suffering and constitutional disturbance than perhaps any other condition of the anal region. There may be itching, severe chills, loss of appetite, furred tongue, high temperature, fast pulse, constipation, bladder symptoms and a constant, agonizing, throbbing pain. The nervous symptoms, those of anxiety and general nervous fear, are often of a severe nature, due to a small rectal fistula. Prostatic involvement may take place. A great many of these symptoms are not readily connected with the pathology present in the rectum. The surgical treatment in anorectal fistula should and will if properly accomplished relieve the above symptoms.

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Usually hemorrhoids produce local symptoms and their surgical removal does not have such a profound systemic effect upon the patient, although in some cases there may be an infection in the liver as a direct metastasis from the infected hemorrhoid. It is my firm belief that many cases of infected gall-bladders originate from an infected thrombotic pile; also ulcers of the duodenum. In this connection, let me recite just one instance. The patient, a woman, 47 years of age, suffering from severe cramp-like pains in upper right quadrant of the abdomen, tenderness over gall-bladder, jaundice, vomiting and constipation. Urinalysis negative; temperature varied from normal to 100 or thereabout. Upon examining the rectum we found a severe case of thrombotic internal hemorrhoids. The general condition of the patient was decidedly unfavorable for operative procedure. The case was diagnosed as an infected gall-bladder, catarrhal in type. We did not expect to find gall-stones as this was her first attack of this trouble. In order to improve the patient's general condition and to prepare her for a gall-bladder operation, we removed the hemorrhoids under local analgesia, and cleared up the rectal pathology. From that time on her symptoms began to improve; her general condition rapidly grew better; her jaundice cleared up and in a short time, she felt so good that she refused further operative treatment. This occurred four years ago. This woman has been under observation at frequent intervals since that time. She has been in perfect health, no recurrence of jaundice, vomiting, nor any of the other symptoms of her gall-bladder attacks of four years ago. This case has been a mystery to me, in that such wonderful results were obtained by such a slight operative procedure. I am unable to explain just how, or what produced these results, unless it was a metastatic infection to her gall-bladder from these infected hemorrhoids, and by removing the focus of infection at the rectum, nature promptly cleared up the gall-bladder.

My object in writing this paper and presenting it for your consideration is, first of all, to stimulate rectal surgeons and especially men who devote their time largely to this work, to a keener realization of their responsibility to the profession as a whole. It is incumbent upon proctologists to teach the profession the lesson

of metastatic infection from the anorectal region, just as our friends the dentists, and nose and throat men have taught that many infections to distant parts of the body originate in their respective fields. The second object in mind was to emphasize the importance of a rectal examination in every case of obscure findings. In fact no patient should be considered as having had a thorough examination without examining the rectum. Many cases of rectal pathology are not discovered, not because they are hard to find, but because they are not examined at all. When the importance of metastatic infections of the anorectal region is fully understood every case presenting itself to the physicians will be examined thoroughly for rectal pathology.

DISCUSSION

Dr. C. Martin, Chicago: As has been illustrated by the case reported, anal infection may result in secondary disease elsewhere.

The usual site of the secondary symptoms is in the muscles and joints and generally in the region from the sacrolumbar articulation to the knees. And the usual type of anal or ano-rectal disease which gives symptoms or signs elsewhere is a suppurative process, ordinarily an abscess or fistula. A case in point is this: A youth having an acute arthritis without other demonstrable cause, which repeatedly occurred only when the drainage from a fistula-in-ano became blocked and an abscess formed. A number of equally definite cases have been reported. Muscular and joint pains have been eliminated by the removal of peri-anal suppuration in a number of instances.

The discussion of anal and lower rectal inflammation without suppuration opens a phase of the subject which is too involved to be discussed here.

Attention should not be directed to the anus as a frequent source of focal infection. As an occasionally overlooked source, it certainly does deserve attention.

Most cases of fistulae and abscesses in this region cause enough trouble so they can not be easily overlooked, and it is the exception rather than the rule that their secondary symptoms are more evident than the local symptoms. However, in the old fistula with but little discharge, the patient may neglect to speak of it; close inspection may be required to discover it or the patient may minimize a condition he has grown accustomed to.

The anus and lower rectum are not frequent foci but they unquestionably are foci at times and are sometimes overlooked.

Dr. Edward H. Ochsner, Chicago: It seems to me the lesson we are to learn from this paper is that we must look for the source of infection everywhere in the body. I think one of the criticisms of medicine is that we are so apt to overemphasize some one point. For a time our interest was all in the tonsil, then

for a time it was in infected teeth. That the Doctor has called attention to the fact that there are some other sources of infection than these is the most vital lesson to be learned from his paper and the one he wants us to learn.

There is one question the paper brought up and that is the question in reference to the relation of infection of the gall-bladder to rectal infection. The late Dr. Gustav Futterer made some very interesting experiments along this line, experiments that never received the publicity or attracted the attention that I think they deserved. He injected a certain pathogenic microorganism into the vein of the dog.

I have forgotten what particular microorganism he used but it was one that was both pathogenic and had certain definite staining qualities. He found that within fifteen minutes after injecting the microorganism into the vein of the dog, this microorganism appeared in the bile of that experimental animal. These references show that the liver is one of the great scavengers of the body, that the liver is able to eliminate a great deal of septic infection provided that there is no obstruction to the outlet of the gall-bladder. The minute there is some obstruction to the outlet of the gall-bladder or if the infection is so intense that the mucous membrane becomes infected, then the gall-bladder and bile ducts get into trouble.

ECTOPIC PREGNANCY*

EDWARD ALLEN, M.D., F.A.C.S.

CHICAGO

Current obstetrical and gynecological literature contains the results of many investigations as to etiology, source of bleeding, decidual formation, and mechanics of extra-uterine pregnancy. The final solutions of these problems when found will undoubtedly aid us greatly in our diagnosis and treatment of this condition. However, until these added factors are given to us, ectopic pregnancy will still remain one of the commonest acute abdominal crises in women that we are called upon to diagnose and treat. With this in mind, I would like to bring before you for your consideration some of our experiences with ectopic pregnancy. None of the procedures are new but are only a correlation of the experiences of others which has, we think, enabled us to deal with these emergencies a little more efficiently than in previous years.

In searching back over the case histories of our ectopic pregnancies and also in talking with my surgical and medical friends, it has seemed

to me that most of our errors in diagnosis were the result of one of three factors. These factors in order of their importance are first, inaccurate history of the present complaint, second, not thinking in terms of pregnancy, and lastly, hesitancy in diagnosis and treatment by the vaginal route.

I believe that at least ninety per cent. of ectopic pregnancies can be diagnosed by means of an accurate history alone. The inaccuracies often found in the history are not by any means always the fault of the attending physician. Patients are very often so indefinite about the sequence of events in their illness that it is almost impossible to obtain symptoms in their proper relations and importance. However, if the physician is thinking in terms of pregnancy many of these difficulties will clear immediately on repeated questioning. I refer here particularly to the symptoms of extra-uterine pregnancy in order of their importance, irregular bleeding, pain and amenorrhea.

I am convinced from a study of the histories of patients coming to us with an ectopic pregnancy that the history of irregular bleeding is the commonest diagnostic symptom. It is true that occasionally we encounter a case of ectopic pregnancy in which irregular bleeding has not occurred. These cases are, however, the rare exception rather than the rule. Any woman in the child bearing age who comes to us complaining of irregular bleeding should be a suspect ectopic pregnancy until proved otherwise. If this irregular spotting has been preceded by a period of amenorrhea even of a few days' duration, the possibilities of an ectopic pregnancy being present are increased a hundred fold. In this connection is where close and intelligent questioning of the patient is of paramount importance. Any bleeding from the vagina to most women is menstruation. This is especially true if it occurs at or about the expected menstrual time. Unless the patient is asked specific questions as to the time of onset, duration and amount, she will honestly think that her last menstrual period was on time instead of two days early or four days late, or that the flow occurring at the regular menstrual time was only one-half the usual amount or duration. Several of our patients have begun to bleed irregularly two to three days before the expected date of the

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*From the Department of Obstetrics and Gynecology, Presbyterian Hospital, Chicago.

next regular menstrual period. The majority, however, have had a varying period of amenorrhea.

The bleeding from ectopic pregnancy usually takes the form of a spotting of blood. The blood lost is practically always less in amount than the regular menstrual flow. The more profuse the bleeding that occurs in a suspected extra-uterine pregnancy the more apt it is to be instead a threatened uterine abortion.

Pain is undoubtedly the next most important symptom and usually the one that causes the patient to call her physician. The usual text-book description of a sharp stabbing or lancinating pain is not at all typical in early or often even in late cases of extra-uterine pregnancy. Pain of this type is most often conspicuous by its absence. In fact, a few patients who have an unruptured ectopic pregnancy are not conscious of any discomfort. The acute pain accompanied by symptoms of shock in extra-uterine pregnancy is *prima facie* evidence of rupture and internal bleeding. In many cases the cramp-like pain in the lower quadrant is mistaken for and described as gas pains. The patient is often unable to distinguish these cramps from ordinary bowel spasms. Her medical attendant may dismiss them as unimportant in the present complaint because they have been present for months or years. Later he may be rudely awakened by the typical text-book pain to find his patient with an abdomen filled with blood and in extreme shock. Pain on defecation is quite a common but often a misleading symptom. The exquisite pain that can often be elicited on movement of the cervix, or elevation of the uterus is frequently found in other conditions such as inflammatory lesions and is therefore not diagnostic. Much too frequently extra-uterine pregnancy is operated upon for gall-bladder disease because the patient complains of pain in the shoulder and a slight jaundice. The shoulder pain is referred diaphragmatic irritation from intra-abdominal bleeding and the icteric tint to absorbed blood pigment.

I have mentioned in the previous paragraphs what seems to me the next most common error made in dealing with tubal pregnancy. It is neglecting to count any woman in the child-bearing age who comes to us complaining of irregular bleeding, associated with discomfort

between the navel and the vulva as a possible ectopic pregnancy until we have proved her otherwise. How many times have all of us said or heard others say postoperatively, "the chance of its being a pregnancy never entered my mind." Errors of this kind are especially apt to occur in the histories of those patients who wilfully or unwittingly lead us astray by withholding important points in their history. I speak particularly of illegitimates or multipara. Multipara have often ceased keeping accurate account of their menstrual habit and think they should know how they would feel if pregnant.

The third point that I have in mind is the use of a routine vaginal examination and colpotomy incision for diagnosis or treatment. I have encountered several instances in which the attending physician had neglected to do a vaginal examination because the patient had told him she was menstruating. Some of these patients had been given ergot on account of irregular menstruation.

Interpretation of vaginal findings is often very difficult. If, however, we bear in mind certain distinctive points and correlate them with an accurate history, the difficulties are correspondingly decreased. We should remember that while the signs of pregnancy, such as softening of the cervix, pigmentation, nausea and breast changes, are often present they are usually much less marked than in uterine pregnancy. Our text-books leave us with the impression that the uterus may be and often is as large as a four months' uterine pregnancy. I think that this is rarely so. I believe that we may safely say that the possibility of a pregnancy being uterine is in direct proportion to the size of the uterus. In fact, a uterus may be palpably smaller than normal in a case of tubal pregnancy. This is due to the fact that the same condition which causes a small or infantile type of uterus seems to predispose to extra-uterine implantation.

One need not always palpate a swelling in the region of the tube to diagnose the presence of an ectopic pregnancy. Our records contain many cases of this type. They were diagnosed preoperatively and operated upon vaginally. The complete ectopic sac was no larger than the distal phalanx of the thumb or index finger. Even in these cases a small amount of free blood was found in the pouch of Douglas.

It is often impossible to distinguish an early threatened uterine abortion, a low grade salpingitis or a persistent corpus luteum cyst from an extra-uterine pregnancy by palpatory or clinical signs alone. The consideration of this differentiation brings us to the points in diagnosis and treatment I would like to emphasize.

The treatment of ectopic pregnancy is surgical removal. There is no doubt that a few patients recover after a varying period of ill health from an extra-uterine pregnancy. This condition, however, is potentially so acute we dare not depend upon this outcome.

Prompt diagnosis and operative removal as early in the course of the disease as possible is imperative. Symptoms of abdominal hemorrhage occurring in an extra-uterine pregnancy which has been placed under observation is evidence of slipshod diagnosis. Prolonged growth of an ectopic implanation causes definitely more destruction of normal, tubal or ovarian tissue by syncytial invasion. Early operation allows conservatism in these women in the childbearing age. Unless specifically contraindicated we have preserved all the normal tissue possible, including the stump of the affected tube. Thirty-five per cent. of these cases have subsequently become pregnant. Fifty per cent. of these pregnancies were normal and the other half were extra-uterine. We feel that the results are worth the added risk.

The patients who consulted us after symptoms of acute abdominal hemorrhage and shock had appeared were operated upon by straight laparotomy at once. The usual supportive measures such as blood transfusion, hyperdermoclysis and fluids by bowel were begun while the patient was being prepared for operation.

Diagnosis was verified and treatment carried out on the remaining group of patients by the following procedure.

Dilatation of the cervix and curettement of the uterus was first done to rule out or take care of a disturbed uterine pregnancy. A uterine pregnancy abnormal enough to cause the symptoms we have referred to should we believe be interrupted. If, however, the uterine cavity did not reveal sufficient evidence to account for the irregular bleeding, pain or amenorrhea, an incision was made in the posterior fornix through the vaginal mucous membrane. After all bleed-

ing points had been secured the peritoneum was opened. In all but two instances in our series of cases old blood could be definitely demonstrated in the culdesac. The amount of this old blood varied from a few drams to bleeding that required quick closure of the colpotomy incision. Colpopuncture could not have demonstrated the old blood in those patients where the smallest amounts of blood were found. Each step in colpotomy is accurate because at all times the field is visible. There are no blind spots in posterior colpotomy.

In the two patients where blood could not be demonstrated in the culdesac we were able in one of them to bring the ectopic sac down into the incision and remove it vaginally. In the other patient old adhesions prevented the spilled blood from reaching the culdesac and held the pregnant tube high in the pelvis. This patient was laparotomized and a tubal pregnancy about the size of an English walnut removed. Diagnosis in this case was based on a very accurate history and the negative uterine scrapings. If a large amount of blood escaped from the colpotomy opening or the ectopic mass was too large or too difficult of exposure, the colpotomy incision was closed and removal completed by laparotomy. The postoperative recovery of this combined procedure was less complicated than that of a comparable series operated upon in previous years by straight laparotomy.

We were able to remove twenty-nine per cent. of all our extra-uterine pregnancies through the colpotomy incision. The convalescence of these patients was shortened by several days. The postoperative course was marked by far less discomfort than those patients operated upon by laparotomy alone.

The postoperative morbidity of those patients operated upon by the combined abdominal and vaginal procedure was as uneventful as those operated upon by straight laparotomy.

We have not had a mortality from ectopic pregnancy since this procedure was inaugurated.

We have several times mistaken low grade tubal infections with swelling in the tube and metrorrhagia for ectopic pregnancy. The patient was saved abdominal section by colpotomy incision. The course of the disease was not influenced by the necessary manipulation.

Colpotomy incision also enabled us to definitely diagnose and treat, with minimal discomfort, those patients complaining of symptoms of ectopic pregnancy which were caused by persistent corpus luteum cysts.

In conclusion may I stress again the following points: First, an accurate history is essential in the diagnosis of extra-uterine pregnancy. Second, extra-uterine pregnancy must always be ruled out in any patient who complains of irregular bleeding during the childbearing years of her life. Third, early diagnosis is imperative and can be safely facilitated by the routine use of the colpotomy incision. Fourth, early diagnosis will enable us to remove a large number of ectopic pregnancies through the vagina.

55 East Washington Street.

CERTAIN FACTORS INFLUENCING THE MENTAL HEALTH OF COLLEGE STUDENTS

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As every individual is the resultant of his heredity and environment, as the plastic, pre-school years are those which have the greatest influence upon character, and as forces of elimination and selection have been operative during the twelve years of the public schools, the student with a normal heredity from a happy home enters college with few complexes, fewer unwholesome repressions, and no special problems for the authorities of the institution. He makes his own adjustments without difficulty, keeps up with his class, gets along with his instructors, and usually plays his part in college with a fair degree of success.

Because such a fortunate combination and happy outcome are by no means always the case, I desire to point out certain influences which undermine or promote the mental health of college students—factors which effect their efficiency, shape their character, hold them to high or ignoble purposes and carry over into life as determiners of success or failure.

Heredity and Environment.—Heredity contains great potentialities for physical, intellectual and emotional development, but birth renders it a closed chapter except as it may prove an asset or liability for the individual, his par-

ents, his teachers and society. Obviously, a college can do nothing about it in the student who requests admittance; it can only admit or reject him.

Environment alone offers hope and opportunity for growth. It has extensive possibilities of modifiability which will not only effect body structure and function, but thinking, feeling and striving. Upon this fact is based the theory and practice of education in its attempt to improve human intellect and character. Euthenics rather than eugenics is the opportunity of the college to produce more stable, wiser and better citizens.

The problem student is usually home made. Upon parents rests the greater part of the burden of making surroundings wholesome and training effective in developing well rounded and socially useful lives. The mental environment of the preschool child is the creation of his parents. Faulty or good mental habits are the most deeply furrowed in the mind during the plastic first five years of life. If during this period the normal desires of the child for self-expression and self-satisfaction are reasonably gratified, facility in adjustment and cooperation are developed. If such normal trends are firmly suppressed not infrequently the child acquires an inclination toward resistance, and contrariness which may handicap it for the rest of its life.

It is in the home that the child gets tendencies to extreme dependence and behavior which prevents it from going to persons whose attitudes are more impartial than its indulgent parents. In this way, traits of character are often cultivated which destroy initiative and which hamper, if they do not incapacitate the individual, until he is unable to make a courageous, aggressive attack upon his environment. Stanley Hall had in mind the evil fruits of parental indulgence when he declared, "Being an only child is a disease within itself."

Divided, unhappy homes, and divorced parents are frequently responsible for the maladjustment and psychoneurosis of the problem student. Faulty conflicts and complexes have their origin in an association with a neurotic mother, a despotic father or both. Undisciplined adults are a burden to themselves and their friends, but the child who lives with them is fortunate indeed, if he escapes without mental peculiarities. Unless

mental hygiene includes the parents and home life of prospective students, it vainly mops the floor without turning off the spigot.

At school the child meets the first impersonal atmosphere and must stand upon his own merits, cultivate objectivity, and adjust himself to the desires of others. In it, forces are at work which not only train and develop him but may through improper methods, premature forcing and unwholesome surroundings prove detrimental. The public school system not only prepares for college, but it eliminates those whose mental capacity and traits of character are not readily adjustable to the demands of higher education.

The Prospective College Student. The young man or woman who requests admission to college is thrice picked, the survival of many adjustments. Of one hundred pupils entering the first grade only seven will reach college; educationally, more than 93 per cent. fall by the wayside for one reason or another. In the presence of such facts, it seems not illogical to assume that handicapping deficiencies of the mind due either to heredity or to environment will force the potential student into the 93 per cent. group rather than permit him to attend college after running the gauntlets of the primary, grammar and high schools.

When admitted to college, the student has met more or less successfully the difficulties of twelve years of education, has satisfied the accepted standards of modern pedagogy and is presumably ready for the next step in his training. As comparatively few freshmen have been class repeaters, their matriculation is a certificate of average physical and mental health. Where the institution requires a high school average of 85, as a prerequisite to entrance, the selective and eliminative influence of the public school system is further accentuated.

As the average age of college men on matriculation is eighteen and college women, nineteen years, they have passed through the greater part of adolescence with its emotional conflicts and all its floundering to achieve balance between desire and repression and are approaching the relative stability of post-pubescence. Their mental "make-up" is pretty well fixed after eighteen years of moulding. College may cultivate such minds but their remodeling is not en-

tirely unlike converting a structural scoliosis into a posturally perfect spine.

The greater the student's physical fitness, the fewer his nervous problems. Other things being equal, physical efficiency and mental vigor go hand in hand. Physical defects, enlarged tonsils, albuminuria, etc., are more common in the mentally abnormal than normal. Students whose nervous instability, sensitiveness, and unusual reaction to environment are due to dysfunction of endocrine glands are unlikely to obtain permanent adjustment to the demands of college life.

College Complexes. College is not a place which gives rise to a high percentage of mental difficulties. There are too many forces in it conducive to sanity to permit many permanent maladjustments. The student unable to orientate himself promptly and to find a satisfactory contact from which to become accustomed to his new surroundings is most unlikely ever to develop into an efficient, aggressive member of society.

There are numerous agencies in large colleges and universities busily engaged in putting the student in touch with his environment in such a way that he hardly needs to do more than to take an interest and work to be successful. The deans of men, of women, and of the various colleges, the athletic directors through intramural and intercollegiate athletics, the health services, bands and glee clubs, the student unions, women's clubs, Y. M. C. A., Y. W. C. A., the churches and their social centers, sororities, fraternities, vocational conferences, literary clubs, fireside forums, class smokers, "get acquainted" organizations, "start right" camps, adjustment lectures, etc., are all forces making it easier for the student to find himself.

In some institutions at least there may even be some ground for the criticism that so much effort is made by so many people to fit the student into his environment and give him a proper start that facility in adjustment is sometimes obtained by a corresponding loss in initiative and self-reliance, qualities essential to successful living.

Some students if left entirely to themselves will become homesick, discouraged, depressed, or the victims of a poor schedule of living. Others may have disappointments and difficulties due to poor cultural and scholastic preparation but a

dozen agencies are present to give them help, seek employment for them and render assistance in meeting their problems. Physical handicaps may prove "thorns in the flesh" for them but medical consultation and arrangement for attention by specialists can be made at the health service station. Financial difficulties may be a source of harassment and embarrassment but increase in the number of scholarships and the amount of the loan funds for deserving men and women are rendering this problem less acute each year.

The problem of sex is much less difficult than twenty years ago. Each generation has had to meet it but none has been so well prepared to do it as the present. Instruction in biology in the high school, the availability of pamphlets dealing with the subject for various ages, the greater appreciation of parents of their responsibility in teaching their children the facts of sex, the instruction in the subject in college hygiene, the greater frankness of the age, and the opportunities in co-educational institutions for wholesome companionship between members of the opposite sex are highly constructive forces in dealing with an eternal question.

A student may experience unrewarded love but a co-educational school provides too much evidence of there being as good fish in the sea as ever were caught for a normal young man or woman to remain permanently handicapped by a one-sided love affair. Co-education may be conducive to romance but it is a great preventive for lop-sided emotionalism and for crudity. The lack of companionship of the opposite sex has a tendency to restrict the development of the highest mental and social qualities. The great problems of life are solved by man and woman together rather than either alone. The daily contact of the most promising young men and women of the state and nation under most favorable circumstances have eugenic and euthenic possibilities which justify the assertion of Dorsey, "Co-education is sanitary education."

Some students may indulge their vital powers in trivialities, may lose the whole in particulars, or may live for show instead of for service but no place is superior to a well conducted college in opportunities for catching a vision of social obligation, to discover the means for realizing it or to find the niche into which may be best

fitted the ability and temperament of the individual.

The drop from the dizzy heights of a high school senior to the abysmal insignificance of a college freshman may prove a strain upon the psychoneurotic or hypersensitive youth but for the normal boy or girl it is just another adventure. Even the former usually learns promptly frustration is not without its compensations. Sometimes the student hitches his car to a star instead of to the best grade obtainable and as a result suffers disappointment, depression and a sense of inferiority. More conservatism in parental expectations and a few words of commendation from college instructors will make his metamorphosis from the shark of the high school pond into the minnow of the college sea, a pleasant experience instead of a conflict.

Some students feel acutely the stress of the breaking of home ties, but their nostalgia is usually of short duration. The attractiveness of extra-curricular activities, the availability of the long distance telephone, good roads, the athletic events, Homecoming, Dads' and Mothers' Days and the usual holidays bring the student and his family together so often that homesickness is no longer an important factor in the maladjustment incidental to college life.

The freshman faces the problem of making friends and not being lost in the crowd. In the large college this is the relatively simple matter of looking up a classmate or some other graduate of the high school of his home town whom he may have known since entering the first grade. Making the acquaintance of his roommate, the student sitting next in class and those living in the same lodging house or fraternity is generally only a question of a few days. The timid, "shut-in" type of student may be slow in getting to know others, but in a short time he will be sought by a college, social or church organization and become adjusted or be brought to the attention of the proper administrative authority.

Religious perplexities, economic skepticism and social doubts are the inevitable results of higher education with its consequent broadening of the student's horizon, the increasing of his insight and the presentation of old and new conceptions in clear contrast.

No man offers a young individual more constructive help in dealing with religious conflicts

than the churches, their foundations, the Y. M. C. A., and Y. W. C. A., to be found in a college community. The staffs of these organizations are highly educated, broad-minded, tolerant, devout men—experts in keeping the interpretation of religion abreast with scientific progress, a broader economic outlook and a changing social order.

Discussions and forums on “up to date topics” and “burning issues” led by students, faculty members, religious leaders and men of national reputation are almost daily available in lecture room or social center. If higher education undermines and overthrows old ideas, it does not fail to provide many agencies to clear away the debris and erect nobler concepts in their place. The college man of today has five helps where his father had one in making the transition from the old to the new outlook on life.

The less serious college complexes revolve around “Greek Letters”, “Dates,” athletics, extra-curricular activities, grades, and excessive parental solicitude. These rarely become sufficiently fixed or intense enough to be pathologic. In co-educational institutions where fraternities are numerous, “wall flowers” are rare, social events are many and every one has a chance to go in for something on the outside or into athletics. Each student gets an opportunity to find in a large degree the prominence he craves in the college community.

If unsatisfactory grades are the cause of the student's inability to attain mental equanimity, he automatically becomes of special interest to his instructor, his class advisor, the dean of his college and the dean of men. From such attention, adjustment is almost certain to follow if the student will work.

In a small percentage of cases, solicitous parents who have forgotten their own youth and who do not appreciate that their children are nearly grown when they enter college, cause their sons and daughters unhappiness, render them inefficient and upset them mentally. As some parents are too old to learn, the complex they create continues until it becomes a fixity.

Prophylaxis. Mental prophylaxis in college students is a four-fold problem: 1. teaching hygiene, 2. provision of an adequate environment, 3. alertness and sustained effort to insure both instruction and surrounding being effective, 4.

opportunity for a consultation with a psychiatrist for those who need it.

The better the teaching, the more wholesome the environment and the greater their practical value, the fewer the students who will need psychiatry to rescue them from the danger of psychoneurosis or to treat them for mental abnormality.

Loss of sleep, malnutrition, overwork, improper methods of study, insufficient exercise, insanitary surroundings and lack of recreation predispose to mental disturbances. Toxemia from infectious diseases, too early resumption of studies in convalescence, and dysfunction of endocrine glands are responsible for certain cases of depression and mental abnormality. The knowledge and practice of hygiene will not only prevent mental disorders but will make it possible for the individual to escape the neurasthenia and psychasthenia commonly called by the college man, “nervous breakdown.”

The monotony of daily routine, disappointments, fears and conflicts are not removed by telling the student not to worry but they are amendable to recreation, encouragement and actual help from the proper individual and organization. Once his difficulties are made known they are not only cut in two but they rarely escape solution. For the “shut in” personality, a friend “redoubleth joys, and cutteth griefs in halves.” Sleep and rest often give a new outlook and time taken to think things through frequently proves a balm to a drooping spirit.

Mental hygiene in college students is a co-operative enterprise of the faculty, administrative officers, directors of extra-curricular activities, religious organizations, lodging house keepers and students. With these agencies working together, the student who has survived the selective effect of twelve years education in the public schools will rarely fail in college because of mental conflicts, complexes or maladjustment.

It is not practical, certainly not desirable that adjustment should be continuous nor standardized. The mind like the teeth requires roughage to be vigorous. The attempt at production of “die cut” individuals ignores the Aristotelian observation, “No excellent soul is exempt from a mixture of madness.” Thought, feeling and behaviour must have latitude to escape standard patterns which would rob many delightful per-

sonalities of the splendor and charm of the various hues of their many sides.

Adjustment is dynamic not static; a process not a state. Development is a series of compromises between the needs and desires of an individual and the demands of his environment. Youth must be surrounded by encouragement. The college and the church must recognize and supply its need for an interpretation of life, science, social theory, ethics, philosophy and religion. It must be given such an understanding of sex and human behavior as will enable it to face its own craving and inferiorities without developing personal or social handicaps. It must have safe freedom to develop, to discuss, to think and to make mistakes. For only from such liberty, hope and kindly help will it find the truth and the way which leads to the abundant life.

THE FIVE MOST COMMON ERRORS IN OBSTETRIC PRACTICE*

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In a paper which I read before the Clinical Conference of the Washington Park Community Hospital in October, 1928, "Occipitoposterior Positions in Labor," I enumerated the points which have been referred to by one of the professors of obstetrics at Northwestern University Medical School as the five most common errors in obstetric practice namely:

1. The lack of a complete obstetric diagnosis.
2. A lack of the knowledge of, or a failure to appreciate, the real principles of asepsis and antiseptics.
3. Ignorance of the course of occipitoposterior positions.
4. Operating before dilatation of the cervix is complete.
5. Neglect of the mother and baby during labor because of inability to appreciate the pathologic dignity of the art of obstetrics.

Briefly, let us consider each of the above points. But the consideration will of necessity be brief, since we could easily spend our allotted time on any one of them. First of all, let us

take up the matter of a lack of a complete obstetric diagnosis. Apropos this very thought I am sure you all know, at least by reputation—and some of you personally—a great surgeon whom I have in mind, Christian Fenger. He once said that any fool can learn to cut, but it takes real judgment to make a diagnosis. And the longer we practice medicine, the more wisdom will we recognize in this statement.

When a woman comes to engage one of us to attend her in a future labor—I say us because we have all sinned and come short of the glory of doing our best in our work—how many make an examination such as will enable one to answer these questions:

1. Are the pelvic measurements, external and internal, normal?
2. Has the patient a good heart?
3. Are her kidneys sound?
4. Has she infective foci in her body?
5. Is there evidence of syphilis?
6. Is the general physical condition of the patient sufficient to enable her to withstand the stress and strain of labor?

How many of us can answer all these questions in every case? Let us consider the first of them: Has the woman a normal pelvis? Of course this comes under the head of diagnosis. Within the past few months I was called to see a parturient, the wife of a doctor. Think of it, the wife of a physician, a man who had even that very month been graduated from a medical school; at least, that was his story. He did not know that his wife had a strongly masculine type of pelvis. He did not know that the fetus occupied an occipitoposterior position. What is more staggering, he knew absolutely nothing relative to the positions which the head may occupy or assume in entering and passing through the birth canal. He knew nothing of pelvic measurements, either external or internal. And these latter, while they do not furnish inviolable information, are definitely useful and should be made on all primiparae. I bring to your mind merely this one instance. Happenings of this sort, with its consequences, could easily be increased tenfold.

2. Has the patient a good heart? Only recently an incident which occurred in a well known hospital was brought to my attention, in which case a woman apparently in good condi-

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tion went into labor, but just following delivery suffered acute dilatation of the heart and made her exodus lethalis. The autopsy revealed a well developed myocarditis. Should we not examine the heart closely?

3. Are her kidneys sound? Too frequently have we had our attention directed to a sudden development of eclampsia, or eclamptic toxemia, the prodromata of which could have been discovered had we made a thorough examination in the beginning of the gestation period and watched the patient closely throughout her pregnancy. Who can forget the picture or the feeling of impending danger by the finding of epigastric pain, albuminuria and a gradually increasing blood pressure?

4. Has the patient infective foci in her body? A short time ago I read an article in which the essayist reported two cases which had been operated upon for conditions other than that which caused death. A post mortem revealed that in one case a septicemia had originated in an otitis media, while in the other a pyelitis had been the etiologic factor in the general septicemia.

It is not infrequent that patients go into labor with a generalized infection, the origin of which may be elsewhere than in the uterus. It must not be overlooked, however, that the uterus can be infected. Even the cervix can be, and does become, infected through improper technic. A patient may have bad tonsils, carious teeth, diseased sinuses or even other infected foci—as a cholecystitis or an appendicitis—which may contribute to a general infective process. It is greatly to our advantage to recognize these before delivery and preoperatively, as well, because of the medico-legal aspect, since the accoucher or the operator may be accused and put to no small amount of trouble and expense. As a general rule, however, it is not well to attack these foci late in pregnancy, for one can easily stir up an infection which may become more dangerous than the one he is seeking to cure.

5. Is there evidence of syphilis? If a woman gives a history of a previous still birth, or if the husband gives a luetic history—and parenthetically one might ask how many investigate the personal history of the husband who engages us to attend his wife throughout pregnancy and labor? I repeat that if a woman gives the his-

tory of a stillbirth or late abortion, or if one finds in the course of his examination any of the well known symptoms of syphilis in the woman and the husband and has a Wassermann taken, he will then know whether to treat her during the gestation period.

The question has frequently been asked that if a gravida gives a positive Wassermann, or a possibly repeated one, whether antiluetic treatment should be instituted? Unless the husband, also, gives a positive Wassermann I should answer in the negative. Further, if it is only during pregnancy that she shows a positive Wassermann and there is no other evidence of syphilis in her history or the finding, I would not administer treatment for syphilis. On the other hand, if she has had a stillbirth and the blood Wassermann is positive, whether the blood of the husband is positive or negative, she should have antiluetic treatment. Moreover, it should be our aim to *know*, at the time we assume the care of a pregnancy case, whether the husband has had any venereal infection. Even more than that, we should warn him not to have sexual intercourse with his wife during the last six to eight weeks of her pregnancy. The bag of waters may be ruptured during such an act. Infection and death have been reported to have followed in the wake of this failure to advise husbands properly.

How nonchalantly do we supply our clientele with a little booklet or a set of rules, with our names appended thereto, setting forth our ideas as expressed by someone else! Of course, they do not always read these. If they did, it would fall far short of the emphasis that would be conveyed were we to tell it to them personally. We know that a woman should not take a tub bath during her last month of pregnancy, but how few of us so advise her!

6. Is the general physical condition of the patient sufficient to enable her to withstand the stress and strain of labor? There is no question that many of our mistakes lie in not knowing our patients, as well as in failing to make a complete diagnosis along with a prognosis of all the other things which could happen should we become neglectful of her. And I dare say that more than half the obstetric complications which confront us are due to overlooking the finesse in diagnosis. That we slip up, however, is quite

natural; especially where the cases begin to increase from year to year. They are apparently healthy women. Their blood pressure and urine are normal at the time. And one is simply inclined to take for granted, in occasional cases at least, that *everything* is normal. This, of course, can not hold. We should make it our business to *know* these things.

Our second mistake deals with *asepsis and antisepsis*. We all realize that 'we have done the things we should not have done, that we have left undone those things which we should have done' and that there is too much professional carelessness in some of our work; also, that we do not always carry out, nor in many instances even appreciate, the finer points of these principles of asepsis and antisepsis. Too often we seem to forget that bacteria are omnipresent and that it does not take many to kill some individuals.

On account of a wide and rich experience some surgeons have become somewhat callous to the presence of bacterial organisms and have found that their patients have survived even fulminating infections. To quote one of my professors, "A man may be ever so clean; he may remember every point through which bacteria may gain entrance to the body; he may wear five pairs of sterilized rubber gloves one on top of the other; he may not touch anything; and yet, if he does not know and practice the principle of asepsis and antisepsis, he is going to have a greater run of infection than the one who does know, even though the latter may be dirty."

You have all heard of Professor Nicholas Senn. Some of you have known him personally. I once heard a highly reputable clinician, in a lecture before one of his classes in Northwestern University Medical School, remark that he had seen the operating-room nurse trying to attract Senn's attention by tugging at his gown with one hand and holding a basin of bichloride solution in the other. During his operative procedure he would talk continuously, describing his work and the findings. He would step to the blackboard and make drawings of the pathology he wanted to describe. Then he would go back to the operative field without disinfecting his hands unless the nurse beat him to it. With it all, he had surprisingly few infections; while other surgeons in the same hospital not

considered his equal, but far more careful in their asepsis, had about the same number of infections.

The reason for the difference? In the first place, Senn was a real anatomist, as well as a general clinician and pathologist. Secondly, he was a physician and surgeon in all that the terms imply. He cut the tissues neatly. He would tolerate only a minimum of pulling or tugging. He did not traumatize. As a consequence, the germs he introduced were taken care of by the health, uninjured tissues. Herein lies the keynote in obstetrics and for obstetricians. The accoucher who applies forceps inartfully, making traction in an unskilled manner, or who attempts to dilate the cervix, bruising and tearing the tissues so that in the course of a few short hours they become blue and edematous, thereby contributing largely to necrosis, simply leaves the gates wide open for a flora of bacteria to invade a medium as rich as could be found, with almost as little resistance as an artificial medium could present for defense and a prognosis which could scarcely be questioned.

Now, while we have briefly discussed infections, the matter of non-infection must not be overlooked nor minimized. And in regard this very thought, one should strive to keep his hands out of or away from infection. How frequently one sees this principle violated may be observed by watching men examining infected specimens with the ungloved hand! It is not an unusual procedure at medical meetings, where specimens are passed around, that some make examinations with their naked fingers, pass the specimens on and then wipe their hands on their trousers or on a towel. For example, a clinician demonstrates a discharging vulva where his fingers come within only 6 to 8 cm. of the introitus. It may not occur to him that he comes in contact with the infection through the patient having previously rubbed her legs together and spread the organisms in such a manner that he gathers the worst kind of infections on his fingers.

These are merely a few ways which serve to illustrate how one's fingers may become infected, as well as to magnify the importance of non-infection. One may think these are small points to be so minutely emphasized, but we know that no amount of scrubbing can remove the germs from the deep layers of the skin and the gland openings; consequently, if a glove is torn in the

course of an operation, the hand cannot but part with innumerable organisms which it carries.

During the gestation period the doctor should make it his business to provide for the asepsis of labor. It should be borne in mind that the woman is going to make a race for which she should be prepared the same as the athlete who is to be groomed for a field-meet. So, if she is depleted in strength, if she is anemic, or if there are domestic conditions which tax her nerves, these things are all going to reduce her resistance and her immunity to infection, and they should therefore, be reduced to a minimum.

While hygiene and asepsis are essential during the period of pregnancy, they must, by all means, also, not be overlooked during labor, since it is at this particular time that every iota of strength must be had to carry the patient through this crucial test of endurance, and every attention must be given these details in order that the post partum period may be shortened and made the less eventful.

That muscular exercise creates an acidosis is no longer questioned. So, if a woman fails to receive the necessary nutrition during labor; if she is given an insufficient amount of fluids; if she becomes dehydrated; or if she lacks the proper amount of rest and sleep in addition to the muscular effort in consequence of her labor; and then added to all this an anesthetic is given, still further reducing her alkali reserve, one should not be at all surprised if the patient goes into shock after delivery or postoperatively. or even if she becomes a prey to bacteria which chance to be present, giving rise to a puerperal infection.

Early interference in pathological labor, therefore, should be a point for consideration. This feature, of course, brings us back to diagnosis. One *sometimes* delays interference even when he is convinced that sooner or later he will be *compelled* to interfere, because of the simple fact that *he, personally, does not know* in just what manner *interference should be directed*. Again, this should emphasize the matter of diagnosis.

Permit me to say that I can call to my mind several cases in which I have been called in consultation that, had a correct, early diagnosis been made and a section done, a live baby would have been born instead of a dead one;

whereas, all that could be done at the time was to save the mother. I might cite others where the application of forceps, or version and extraction would have prevented hours of useless suffering and prolonged, purposeless labor.

Finally, it should be our aim to conserve in the loss of blood, since we know it is a significant, life-contributing factor. Some men, seemingly, are a trifle careless in this respect. It is an obstetric error which should be classed under a proper lack, or a disregard of the knowledge of the real principles of asepsis and antiseptis.

In discussing the third of these errors, *occipitoposterior positions*, let us ask ourselves the question, "How many men *know*, or could give in detail or even in general, the real mechanism of an occipitoposterior position so that he could predict, when a woman goes into labor, if it is going to be a spontaneous or an operative termination? How many physicians could describe the mechanism, not just what takes place or should take place before their eyes, but could actually and accurately describe the particular mechanism so that another might understand it?"

One might ask why should we know the mechanism of this particular position? In the first place, if the factor or factors underlying the mechanism are understood, the causes which bring about the anomaly may also be understood. And one would be enabled thereby to know how to manage and direct such a labor as to use the mechanism nature had provided. In other words, one would be prepared to assist nature more efficiently in such emergencies.

Again, we are confronted with the importance of diagnosis, and this might well have been included in the lack of a complete obstetric diagnosis. But it is so important and so many babies are lost from neglect through a lack of an understanding of the mechanism of these cases, it has been selected as one of these five errors. This anomaly can be seen early in labor. When the head remains high, the first thing which should occur to one is that the condition is a possible occipitoposterior. It has been well said that "When a primipara goes into labor with the fetal head not engaged, one may expect trouble; in 99 cases out of 100 one will encounter trouble; and of the 99, 60 of them are going to be occipitoposteriors."

Briefly, the treatment is as follows: The first

and most important proceeding is to find out the cause, since therein lies the indication for the treatment. The cases, as I have indicated in a former paper (q. v., Ill. Med. J., p. 136, Aug., 1929) may be divided into two classes, at least nature does this for us. 1. Those in which the head is engaged and 2. Those in which it is high and not engaged. If the head is high, the sine qua non is to get complete dilatation of the cervix, because the course is pretty well laid out unless the pelvis is contracted and the occiput fails to engage from some cause which, within itself, would indicate a section. If one fails to get complete dilatation of the cervix he may be made the recipient of unusual grief. But as soon as dilatation and effacement are complete, one becomes the obstetric master and he can then do a forceps or a version and deliver at will.

Relative to the fourth error, *operating before the cervix has completed its dilatation*, is, in the opinion of our best obstetricians, a grave one. It is a condition more sinned against by men who are attempting to do obstetrical work than any other, or probably all other conditions combined in labor.

The following most excellent quotation as taken from my notes while at Northwestern is given verbatim et literatim:

The cervix, as we should know, is anchored by connective tissue strands and layers of fascia radiating from it and fastening it, like the balanced hub of a wire wheel to the pelvis. It can, therefore, be likened to the hub, the pelvis to the felloe, and the fibrous tissue strands or ligaments to the wire spokes. As a matter of common knowledge we all know that when one pulls down upon the hub of a wheel the spokes are stretched, torn, or broken and pulled out of the felloe. Likewise, in labor, especially when the cervix is pulled upon, as is done in any operative condition before it has been completely dilated, the ligaments are stretched or torn from their pelvic attachments. We should, therefore, secure full, spontaneous, natural dilatation of the cervix in labor, through which the head can slip without pulling or dragging upon the ligaments and tearing them from the pelvic wall. In every case possible we should avoid forceful dilatation of the cervix, pituitrin administration, bearing down efforts or the application of forceps till the cervix is completely dilated and effaced. And accordingly we will find that when the baby is delivered it will not pull the hub out of the wheel.

The fifth and last error under discussion is *neglect of the mother and baby during labor because of inability to appreciate the pathologic*

dignity of the art of obstetrics. This may seem to you to be a very strong indictment to make, but I have frequently heard one of our authorities remark that many obstetric patients are obviously and shamefully neglected. Perhaps it was an accusation of this sort which contributed to putting the Sheppard-Towner bill through, for we know that it could never have gained favor or attained any following had we as physicians been giving our best to our obstetric patients.

Finally, it should be recognized that one who attends a patient during her gestation period and throughout her labor, has a real job. "He has more to do than simply 'watching a hole,' as some doctors have vulgarly remarked. It may be true that some do no more than that; in fact, some do less. They do not even watch until it is too late." And with the ritualist we shall have to admit that, "like lost sheep we have erred and strayed from" our *obstetric teaching*, as well as from what our good judgment dictates. "We have followed too much the devices and desires of our own hearts" as well as the lines of least resistance, both mentally and physically and from a medical and surgical standpoint, and there is very little life left in some of our patients because of too little attention devoted to that which should concern us most. It is, therefore, scarcely to be disputed that if each case is studied as it should be, we are sure to find the underlying or fundamental reason for the existing trouble, to see how it effects each phase of the case and thereby be given sufficient indication for interference, to be able to place our indication and to follow the course of procedure which we have outlined, even to its consummation.

SUMMARY

1. A thorough diagnosis should be made during pregnancy.

2. One should thoroughly acquaint himself with, and have a proper understanding and appreciation of, the real principles of asepsis and antisepsis.

3. A complete knowledge of the mechanism of occipitoposterior positions is a necessary prerequisite in the training of an obstetrician.

4. Profound respect should be had for the cervix, in that no operative measure should be attempted until there is complete dilatation and effacement of this part of the uterus.

5. No neglect should ever be permitted in attending a woman in labor.
2376 East Seventy-first Street.

CONCERNING THE TREATMENT OF ICTERUS CATARRHALIS WITH INSULIN.—H. Schneider (*Wien. klin. Wchnschr.*, 39:1277, 1926).

In a case of yellow atrophy of the liver it was observed by Richter that under the influence of insulin with simultaneous doses of grape sugar, the final fatal outcome could be postponed for an extraordinarily long time. The above named author began this test also in more chronic forms and in cases of long continued icterus, in which the prodromal state of an atrophy is not to be excluded.

Its theoretical justification, that under insulin action together with the plentiful carbohydrate allowance, there results an intensive glycogen formation and fixation in the liver cells by which these are strengthened against the anatomically and functionally injurious influences, is based on the statements of other authors also.

Under these suppositions, the treatment of icterus catarrhalis seemed rich in expectation to Schneider also, especially since this disease was scarcely susceptible to a medical influencing up to the present and usually the spontaneous course was awaited. Schneider used insulin therapy in more than 12 cases of icterus catarrhalis. In proportion to the severity of the case, he gave five units of insulin up to three times daily, with simultaneous vigorous carbohydrate diet, combined with grape sugar enemas and eventually grape sugar intravenously. In all cases, he had the impression of a significantly rapid disappearance of the morbid symptoms.

THE ENZYME REACTION IN SOME ENDOCRINOPATHIES OF CHILDHOOD.—V. Tripputi (*Riforma med.*, 42:616, 1926).

The author investigated the enzyme reaction in hypothyrosis, achondroplasia, mongolism, rachitis and hypoplastic conditions of varying degrees. With the exception of one case, of thyroid disease, the reaction always turned out negative.

The author assumes that the endogenous stimulations are not sufficiently strong to effect such an increase of ferments that their demonstration could be accomplished with the enzyme reaction.

INSULIN FORCED ALIMENTATION TREATMENT AND INSULIN SENSITIVENESS IN TUBERCULOUS PATIENTS. — Unverricht (*München. med. Wchnschr.*, 73:1473, 1926).

The best measure of a promising result in insulin therapy and of a correct dosage is the gain in appetite, which is greatly improved even after the first few days of treatment. Contraindications for the application of insulin are the more chronic types without fever or hemorrhages, which apparently can be evoked by insulin; also during menstruation did the author suspend insulin treatment for this reason.

Cases coming under consideration for the use of

insulin are the more chronic types without fever or subfebrile. Also, pneumothorax cases, which show a tendency to weight decline, so far as this is not caused by active tuberculous processes, seem to be quite suitable for insulin forced alimentation treatment.

Respecting the use of insulin in active tuberculosis, the indications have not yet been definitely established, according to the author. The psychic influences of the medication on the patient must be pointed out. When the appetite improves, the patients again have more hope, especially when they have previously taken all possible agents for stimulating appetite without any result whatever. In the majority of the patients the general condition improves with astonishing rapidity.

An improvement of clinical symptoms was not to be expected from this therapy from the outset; however, this sometimes occurred in proportion to the general physical improvement.

ON THE QUESTION OF PROPHYLACTIC INTRAVENOUS INJECTION OF PITUITARY EXTRACT IN THE THIRD STAGE OF LABOR.—W. Sigwart (*Ztrbl. f. Gynäk.*, 51:280, 1927).

The author corroborates the good results which Jess had with prophylactic doses of pituitary extract. In all operative deliveries at the moment when the child is developed, the author gives an injection of pituitary extract intravenously and had the experience as did Jess and others that in this way the third stage of labor is extraordinarily shortened almost without exception and the loss of blood is significantly reduced. The author also gives pituitary extract prophylactically in spontaneous delivery, when anomalies are present, which make empirical complications in the third stage of labor. The effect appears with startling rapidity. No disadvantages at all.

OVARIAN TUMORS IN INFANCY AND PUBERTAS PRECOX.—G. Termeer (*Arch. f. Gynäkol.* 127:431, 1926).

Teratomas condition precocity only when they have their site in an endocrine organ related to sexual development. The decisive factor is, therefore, the localization and the disturbance caused thereby of the reciprocal relationship of the internal secretory organs, and not the tissue structure of the neoplasm; the cause for the pubertas precox is to be regarded in cases of tumors as endocrine and not as ontogenetic.

INTERFEROMETRIC INVESTIGATIONS OF THE ENDOCRINE DECOMPOSITION DURING PREGNANCY UNDER NORMAL AND PATHOLOGIC CONDITIONS (ECLAMPSIA AND HYPEREMESIS GRAVIDARUM).—Heilmuth (*Deutsche med. Wchnschr.*, 52:1894, 1926).

In resume the following may be said concerning the interferometric endocrine investigations during pregnancy and during delivery under normal and pathologic conditions. Even if we undertake similar interferometric endocrine investigations in a definite and well-defined field (pregnancy and labor), during which typical changes in the endocrine system are certainly present in the organism of the patient—indeed, in the

majority of cases accompanied by an increase in endocrine function—the result of such interferometric endocrine investigation is only negative. This result is well in accord with the experiences which have been gathered in endocrine conditioned disease states outside of the gestation period. As here, the interferometric serodiagnosis in its present form (at least judging by the experiences collected in the Wurzburg Women's Clinic) does not bring any further light on the hitherto unknown relationship of the endocrine changes appearing during pregnancy under normal and pathologic conditions.

THE METHOD OF DIAGNOSIS OF THYROGENOUS FUNCTIONAL DISTURBANCES WITH THE HELP OF INTERFEROMETRIC BLOOD INVESTIGATIONS.—F. M. Groebel and G. Hubert (*Schweiz. med. Wchnschr.*, 56:949, 1926).

In the opinion of Paul Hirsch, the diagnostic value of the interferometric blood examination is today almost generally recognized. The authors have tested the method of quantitative organ decomposition in different diseases, and could likewise convince themselves of the value and specificity of the reaction.

In particular, did they study the interferometric blood examination in thyrogenous disturbances with the exception of thyrogenous obesity. They came to the following conclusions: In thyrotoxicosis, investigation of the thyroid alone does not for the most part suffice for a knowledge of the disorders; one must unconditionally investigate serologically all kinds of thyroid disease, otherwise one will, as in one of the cases described by the authors, find a normal decomposition for the thyroid upon a partial examination of the organ alone, even despite the most severe changes, and will consequently be disappointed with the working capacity of the method. With complete investigation, on the contrary, and only then, will the type of the disturbance be clear; in addition, the quantitative investigation makes it possible to recognize the degree of the disturbance.

Society Proceedings

ADAMS COUNTY

Dr. Sidney A. Portis, Professor of Medicine, Loyola University School of Medicine, Chicago, Illinois, was the guest of the day. From 10 a. m. until 11:30 a. m. Doctor Portis held a medical clinic at St. Mary's Hospital, and at 7:30 p. m. a dinner was given at the Elks Club Restaurant in his honor.

The Scientific Meeting was called to order by the President, at 8:35 p. m., at the Elks Club, with fifty-three in attendance.

The address of the evening was a paper by Doctor Portis, entitled "Medical Management of Functional Disturbances of the Gastro-Intestinal Tract," which was illustrated by lantern slides. The discussion was led by Doctors A. W. Werner and C. W. Pfeiffer, followed by Doctors M. E. Bitter, H. J. Jurgens, J. E. Miller, A. H. Bitter, and closed by Doctor Portis. Doctor Portis was given a rising vote of thanks for his courtesy in addressing the Society.

The Secretary read the minutes of the April meeting of the Society, together with the minutes of the Special Meeting of the Council, which was held on April 29 and also letters received from Doctor Andy Hall, Director of Public Health, State of Illinois, dated March 21, April 23 and April 29, pertaining to the "physically handicapped" children's commission of Illinois. A motion was carried that the minutes of the April Society meeting be approved as read.

Doctor Wells made a motion that the Society reconsider the resolution introduced by Doctor Knox at the April meeting, which read as follows:

Resolved: That it is the sense of this Society that no officer of this Society may use his official position, or his official signature, in a matter involving, or of concern to the members of this Society as a whole, without first having received the approval of the members thereof at a regular meeting of the Society.

Be It Further Resolved: That no officer or member of this Society may accept appointment on any committee having association with an organization of lay origin, and which committee is being formed for the purpose of Lay, State or Federal practice of medicine, without first presenting the matter to this Society for discussion with subsequent affirmation or rejection.

For Whereas the most of such appointments arising from a lay source are but another means of getting professional sanction and professional acquiescence for legislation similar to that developed by the Shepard-Towner Act, and,

WHEREAS: Practically all such movements and the solicitations for medical members of committees are but another means to delude and mislead the profession and the public in the interests of politicians, social workers and meddlers, or of individuals having a personal axe to grind.

Be It Resolved: That no officer or member of the Adams County Medical Society may accept such an appointment, as a committee member, or in any other official position, for any so-called health movement without the approval of this Society.

The motion was lost. A motion that the resolution adopted by the Society at its April meeting be published in the Quincy Medical Bulletin was made by Doctor Beirne, and carried. He then made an additional motion that our delegate be instructed to carry out the spirit of this resolution at the next meeting of the Illinois State Medical Society. Carried.

Doctor Center gave his opinion regarding the "physically handicapped" children's commission and expressed confidence in the Director of the Illinois Department of Public Health. He then offered a resolution requesting that the confidence of the Society be stated. A motion made by Doctor Nickerson that this resolution be laid on the table was carried.

The Secretary then read the minutes of the May meeting of the Council.

Doctor Cohen made a motion that the minutes of the "special" meeting of the Council, held on April 29, be approved as read. A substitute motion, that these minutes be approved, except as they did not conflict with

the action of the Society, was made by Doctor Beirne, and the substitute motion carried.

Following this there was a discussion relative to the Society's publicity. Doctor Pearce condemned the newspaper publicity given the Medical Society meetings. Doctor Stevenson opposed publishing any of our minutes in the Quincy Medical Bulletin. Doctor Wells made a motion endorsing the publicity features of the Society as had been conducted by the Secretary's office. Doctor Nickerson moved that this motion be tabled. This was carried.

Doctor Center made a motion to adjourn, which was lost.

A motion was made approving the minutes of the May meeting of the Council as read. Carried.

The motion to adjourn was carried about 11:20 p. m.

HAROLD SWANBERG,
Secretary.

ALEXANDER COUNTY

At the regular monthly meeting of this Society, held at the Halliday hotel, in Cairo, the evening of May 23, the following interesting clinical cases were presented and discussed: Dr. Jas. S. Johnson, "Infected Lateral Sinus Thrombosis Without Mastoid Involvement"; Dr. Jas. M. McManus, "Hernia Following Cholecystectomy"; Dr. Jas. M. Gassaway, "Unusual Features in Scarlatina in an Adult"; Dr. H. A. Davis, "Gonorrhea in a Married Man of Unknown Origin"; Dr. J. K. Rossen, "Two Brothers of 11 and 5 Years With Progressive Muscular Dystrophy." The latter cases proved especially interesting.

Dr. O. T. Hudson of Mounds, Ill., read a splendid and exhaustive paper on the subject, "The Physician Himself," the discussion on which was led by Dr. B. V. Rife of the same place. Dr. L. F. Robinson of Ullin, Ill., reported on the recent state meeting at Joliet.

The Society voted to take the usual three months vacation, reconvening in September with an out-of-town speaker and a dinner meeting. The secretary was authorized to secure the speaker for the occasion.

JAS. W. DUNN,
Secretary.

COOK COUNTY

Joint meeting of the Milk Commission and the Chicago Medical Society, April 30.

Symposium on septic sore throat.

Arnold H. Kegel, Commissioner of Health, presiding. Epidemiology and Pathology of the Disease, David J. Davis.

Bacteriology With Reference to Active Infections and Carriers, I. Pilot and Mrs. Hallman.

Bovine Infection, T. B. Hadley.

Problems in Control, Professor W. D. Frost, University of Wisconsin.

Discussion, Ruth Tunnicliff, Joseph Capps, Gladys Dick, J. Warren VanDerslice.

The Chicago Society of Industrial Medicine and Surgery, May 7, 1930.

Immediate Repair and Mobilization of Fractures Into Joints, Paul B. Magnuson.

Principles of Nerve Suture, Dennis W. Crile.

Chicago Medical Society, regular meeting May 14, 1930.

The Use of Ointment for the Active Immunization Against Diphtheria, by Benjamin M. Gasul and Arnold H. Kegel, Commissioner of Health of Chicago.

My Trip North With MacMillan, by William A. Thomas.

MERCER COUNTY

The annual meeting of the Mercer County Medical Society was held May 6, 1930, at the Oak View Country Club at Aledo, Illinois. Dinner was served at 7 p. m. and following this a business session was held. At this time these officers were elected to serve the following year: President, T. D. Coe, Keithsburg; vice-president, G. H. Moore, Aledo; secretary-treasurer, G. L. Rathbun, New Windsor; delegate, G. L. Rathbun, New Windsor; censors, V. A. McClanahan, J. W. Wallace and Hugh Stites, all of Aledo.

The first paper of the evening was given by Dr. R. K. Packard of Chicago, Illinois. His subject was "Medical Economics" and it was presented very ably and interestingly. Discussion was by Drs. Ostrom and McEvers of Rock Island and Dr. Camp of Monmouth. The second paper was by Dr. Lucius Zeuch of Chicago on the subject of "Pioneer Shrines and Physicians of Western Medicine." This was illustrated and besides being informative it drew many comments and reminiscences from some of the old-timers present. General comment followed.

Twenty-six physicians from Monmouth, Rock Island and Mercer County attended.

JOSEPH DAURSYS, Secretary.

Personals

This issue of the JOURNAL carries as a supplement the portrait of Dr. Wm. D. Chapman, president of the Illinois State Medical Society, 1930-1931.

Dr. Chas. E. Humiston addressed the Rotary Club of De Kalb, Illinois, on April 30, 1930. The subject of the address was "Medical Parasites."

Doctor and Mrs. Howard Burns of Carrollton sailed May 22 for Great Britain, where Dr. Burns will do post-graduate work at Saint Bartholomew's Hospital, London.

Dr. I. Harrison Tumpeer addressed the Jackson County Medical Society at Jackson, Michigan, Tuesday, May 20th, on "The Simplicity of Infant Feeding and Other Hazards."

Dr. Fred M. Meixner, Peoria, Ill., addressed the Public schools of Washington, Illinois, and

a Health Week meeting under the auspices of the Kiwanis Club on May 9, under the direction of the Educational Committee.

Dr. Everette R. Quinn was recently appointed health officer of East Alton to succeed the late Charles A. Moore.

Dr. James G. Carr, Jr., Chicago, addressed the Sangamon County Medical Society, Springfield, May 1, on "Examination of the Heart."

The Madison County Medical Society was addressed May 2 by Dr. Carl J. Koontz, Ferguson, Mo., on heart disease.

Among others, Maud Slye, Harriet F. Holmes and Dr. Harry Gideon Wells discussed "The Occurrence of Intracranial Tumors in Lower Animals" before the Chicago Pathological Society, May 12.

The Chicago Orthopedic Club was addressed May 9 by Drs. J. Albert Key and Maurice A. Bernstein on "Bone Atrophy" and "Experimental Work on Low Back Pain," respectively.

The Henry County Medical Society was addressed at Rock Island May 1 by Drs. Clement L. Martin and Edwin W. Hirsch, Chicago, on "Proctology Problems of General Interest" and "Pathology: Diagnosis and Treatment of Prostatic Hypertrophy," respectively.

Dr. Clifford U. Collins, Peoria, addressed the Morgan County Medical Society May 8 at Jacksonville on "Cervical Ribs," and Drs. Arthur Sprenger and John R. Vonachen, Peoria, on "Urologic Conditions in Infancy and Childhood."

The fifty-fourth annual meeting of the District Medical Society of Central Illinois was addressed April 29 by Dr. Deane F. Stanley, Decatur, on "Practical Application of Electrocardiography." Dr. Andy Hall spoke on "Health Problems of Illinois."

News Notes

—An all-day clinic was conducted April 22 by the Decatur County Medical Society and the staff of the Decatur and Macon County Hospital; Dr. Francis E. Senear, Chicago, conducted a dermatologic clinic.

—The Chicago Society of Industrial Medicine and Surgery was addressed May 7 by Drs. Paul B. Magnuson and Dennis R. W. Crile on "Immediate Repair and Mobilization of Frac-

tures into Joints" and "Principles of Nerve Suture," respectively.

—The Chicago Roentgen Society held its thirty-fifth anniversary May 8, honoring Wilhelm Conrad Roentgen, discoverer of the x-rays. Among others, Dr. William Allen Pusey spoke on "Pioneer Development of Radiation Therapy" and Dr. Isaac Seth Hirsch, New York, on a "Eulogy of Roentgen."

—A series of lectures on the circulation was delivered at the University of Illinois College of Medicine by Walter J. Meek, Ph.D., Madison, Wis., April 29-May 1, the titles being "Cardiac Output," "Automaticity and Conduction" and "Some X-Ray Studies of the Heart."

—Dr. George Dick addressed the Chicago Laryngological and Otological Society May 5 on "Focal Infections" and Drs. Joseph C. Beck, George E. Shambaugh and John Gordon Wilson on "An Appreciation of the Importance of Dr. Billings' Theory of Focal Infections in Modern Otolaryngology." Dr. Frank Billings was the guest of honor.

—Dr. E. H. Zweifel, Munich, Germany, gave a series of lectures at the Billings Hospital, University of Chicago, May 26, at 3:30 p. m., on "Bleeding in the Menopause or the Post Climacteric Bleeding"; May 28, "Treatment of Cancer of the Uterus"; May 30, "Results Obtained by the Cancer Treatment"; June 2, "Treatment of Uterine Fibroids"; June 4, "Obstetric Indications," and June 6, "Ectopic Pregnancy."

—The occupational therapy committee of the Chicago Woman's Club has established a curative occupational workshop as a demonstration clinic for students and physicians in the Northwestern University Medical School. The purpose is to restore the disabled to usefulness by physical therapy, work and recreation, and not only to occupy the mind but to restore impaired functions. Tools and appliances are used to exercise impaired parts and reestablish habits of industry in the patient.

—The Chicago League for the Hard of Hearing during National Hearing Week, beginning May 1, held open house, giving demonstrations of hearing aids. During the week, the board of otologists as well as members of the Chicago Laryngological and Otological Society broadcast talks relative to the proper care of the ears, prevention of deafness and the

league's work as carried on in the public schools with children. The Chicago League has undertaken the program of examining 530,000 children with the 4-A audiometer test which is used by 158 cities.

—The Chicago Council of Medical Women meeting, June 6, was addressed by Dr. Bertha Van Hoosen on "An Honor Guest" and by Dr. Elizabeth Helene Schirmer on "The Physiological Reaction as a Test for Pregnancy."

—Dental clinics in the Chicago public schools treated 240,000 children in 1929 and more than 100,000 during the first five months of 1930, it was announced by Dr. S. C. Bromberg, in charge of the work. Of 19,000 pupils examined at the school dispensaries, 35 per cent. had perfect teeth. Dr. Bromberg's report was made at the annual meeting of the public dentists of Chicago and Cook County and the dental hygienists of the Chicago public schools at the Hotel Sherman.

—Statistics on the number of quacks in Germany have revealed that these illegal practitioners increased from 670 in 1876 to 3,059 in 1898 and to 11,761 in 1927. By comparison with bona fide physicians, the proportion of five quacks for every 100 physicians in 1876 increased to twenty-seven in 1900.

—The summer clinics sponsored by the Chicago Medical Society will be given at the Cook County Hospital from August 11 to 22.

—Beginning May 24, 1930, the pathological conferences at the Cook County Hospital conducted by Dr. R. H. Jaffee are to be published each week in the Bulletin of the Chicago Medical Society. The new volume begins with the July 5 issue. The subscription price to those who are not members of the Chicago Medical Society is \$2.00 per year.

Deaths

WILLIAM BARNES, Decatur, Ill.; Harvard University Medical School, 1887; one of the founders and president of Decatur and Macon County Hospital, aged 69; a collector of lepidoptera, of which he had a famous collection, numbering 700,000 specimens, of 1,300 species; died, May 1.

GARRETT ROBERT BARRINGER, Alhambra, Ill.; Bennett Medical College, Chicago, 1880; aged 72; died of nephritis, in April.

JAMES TAYLOR BLACK, Marion, Ill.; Missouri College of Medicine and Science, St. Louis, 1909; aged 53; died April 26.

FREDERICK WILSON BOWLES, Quincy, Ill.; Keokuk (Iowa) Medical College, 1901; served during the World War; aged 51; died, April 1, in St. Mary's Hospital, of cirrhosis of the liver.

BENJAMIN P. BRADBURN, Lincoln, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1891; aged 65; died, May 2, of carcinoma of the stomach, at Vanderbilt hospital, Nashville, Tenn.

EMANUEL BROOMER, Centralia, Ill.; Missouri Medical College, St. Louis, 1880; aged 75; died March 23, of carcinoma of the sigmoid and intestinal obstruction.

WILLIAM ARROWSMITH COSS, Danvers, Ill.; Marion Sims College of Medicine, St. Louis, 1901; formerly health officer; aged 59; died, April 15, of heart disease.

HUGH MAXWELL DEWAR, Chicago; Kansas City Homeopathic Medical College, 1891; aged 59; died, April 15, of chronic nephritis and arteriosclerosis.

ELMER ELLSWORTH HENDERSON, Chicago; Rush Medical College, Chicago, 1896; member of the American College of Surgeons; formerly clinical professor of surgery, Loyola University School of Medicine, professor of clinical surgery, Bennett Medical College, and the Chicago College of Medicine and Surgery; attending surgeon to the Lutheran Deaconess Hospital and consulting surgeon to St. Elizabeth's Hospital; aged 60; died, May 6, at his home in Oak Park, Ill., of heart disease.

HARRY LEONARD JACOBS, Chicago; Medical Department of the University of Illinois, Chicago, 1903; aged 64; died, April 20, of nonepidemic meningitis, following mastoiditis.

JOHN RUDIS JICINSKY, Cicero, Ill.; Rush Medical College, Chicago, 1896; member of the Illinois State Medical Society; aged 67; died April 28, of heart disease.

GEORGE MAXWELL, Sterling, Ill.; Rush Medical College, Chicago, 1899; on the staff of the Public Hospital of the City of Sterling; aged 52; died, April 13, of cerebral hemorrhage.

CHARLES THOMAS PARKER, Johnsonville, Ill.; Medical College of Ohio, Cincinnati, 1886; aged 65; died, May 1; of cholecystitis.

LAVELLE B. ROUBADEAUX, Reddick, Ill.; Physio-Medical College of Indiana, Indianapolis, 1897; aged 61; died, April 16, at St. Mary's Hospital, Kankakee, of cerebral hemorrhage and unilateral paralysis.

JOHN E. SCHOONOVER, Salem, Ill.; Kentucky School of Medicine, Louisville, 1889; formerly secretary of the Marion County Medical Society; aged 63; died, April 9, of diabetes mellitus.

LEMUEL BYRD SHORT, East St. Louis.; St. Louis University School of Medicine, 1906; aged 45; died of pneumonia, May 5.

FRANKLIN GREELEY WESTCOTT, La Salle, Ill.; Bennett Medical College, Chicago, 1897; surgeon for the Matthiessen and Hegeler Zinc Works, aged 58; died, May 13, at St. Mary's Hospital, of appendicitis.

WILLIAM HENRY WILSON, Kankakee, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 71; died, April 30, of heart disease.

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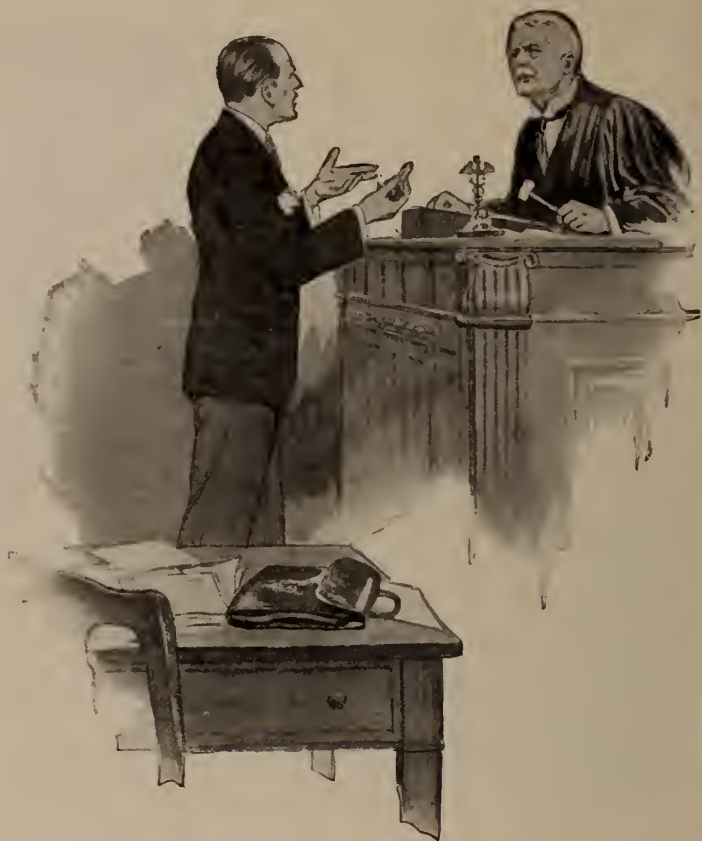
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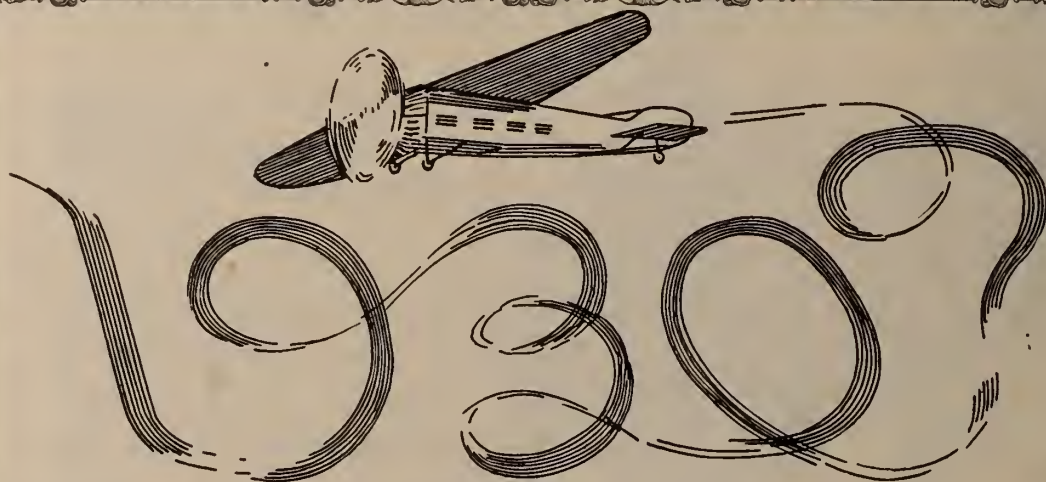
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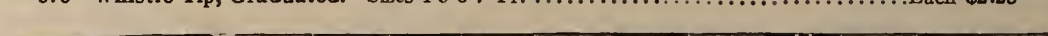

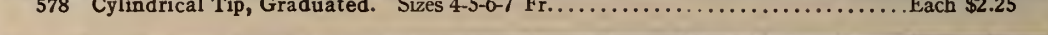
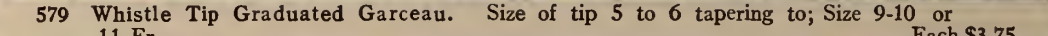

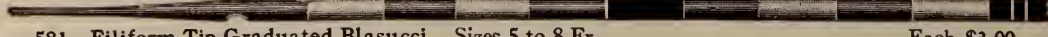
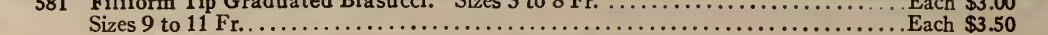
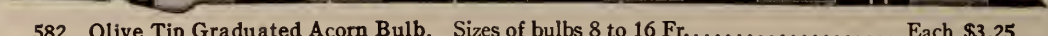
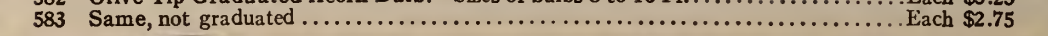
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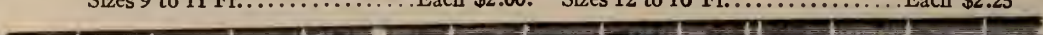

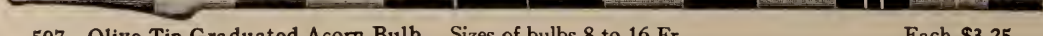

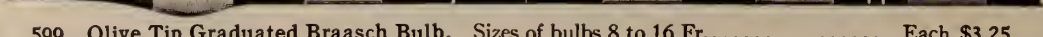
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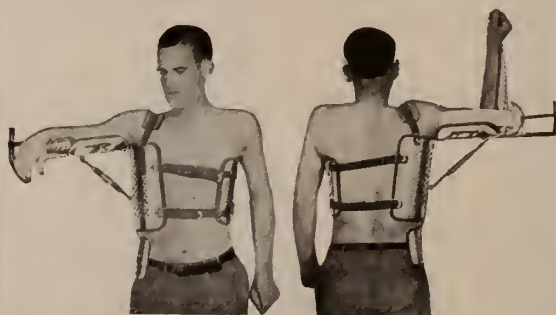
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In the open country—two thousand feet away from the nearest public road and miles away from the dust and smoke of the nearest city—are the biological laboratories of the U. S. Standard Products Company. Here you will find a group of experts devoting their time—and their lives to the development and production of biologicals for human use. Men and women whose only creed it is to produce a product upon which physician and patient can depend with absolute certainty. How well they are succeeding is attested to by the fact that every package of U. S. S. P. is made to a definitely higher standard than is required by the United States government. You may prescribe and use any U. S. Standard Product in fullest confidence. Look for the mark above on the packages you buy.

["Physicians may obtain Diphtheria Toxin Antitoxin and Diphtheria Antitoxin free from any of the Illinois Department of Health 'Antitoxin Agents,'"]



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DIPHTHERIA ANTITOXIN U. S. S. P.

Diphtheria Antitoxin U. S. S. P. is prepared with all the care and exactitude for purity, strength and therapeutic value which years of specialization in the manufacture of biologicals can give to it.

Special attention has been paid to high solubility—freedom from precipitate and almost perfect clarity—reducing to a minimum any chance for serum reactions. Available in 1, 5, 10 and 20 thousand units.

Biloxi's

WARM SUNSHINE
SPARKLING ARTESIAN WATER
— mean Vigor and Vitality



Physicians of the cold North recommend vacations in a warmer climate for the health of their patients—to build back worn nerves and body strength, to restore vigor and vitality.

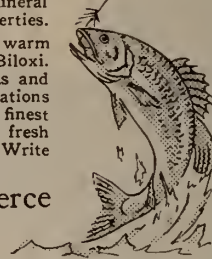
Nestling among moss draped oaks and stately pines, historic Biloxi, on the beautiful Gulf of Mexico, is a most charming and alluring city in which to spend the winter season. Here the warm sunshine and climate are invigorating and inspire physical and mental relaxation.

Every form of recreation is obtainable in and around Biloxi. Outdoor sports such as golf, fishing, horseback riding and tennis delight visitors and convalescents. One of Biloxi's prin-

cipal assets is its wonderful health-giving artesian water which comes from deep wells. This water has been recommended by physicians for its mineral content and health-building properties.

Convalescents are assured warm hospitality and cordiality in Biloxi. There are a number of fine hotels and apartments here with accommodations to meet every pocketbook. The finest of sea foods are to be had and fresh fruits and vegetables all season. Write for literature and information.

Chamber of Commerce
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For the preventive Treatment of Hydrophobia

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We make our vaccine, and will accommodate physicians in the state with our courses of 15, 18 or 21 days' duration best suited to each individual case. To treat all patients alike with the same course and strength of antirabic vaccine, irrespective of the severity and location of the infection and age of the patient, we do not consider scientific . . . We were the first to discard the old Pasteur system of desiccated cords, and to adopt instead the method advised by Fermi, the originator of the phenol killed rabies virus.

We supply our antirabic treatment in vials with syringe, needles, and instructions.

A. Lagorio, M.D., LL.D.
Medical Director

Frank A. Lagorio, M.D.
Assoc. Med. Director

Telephone Superior 0973

SOME ASPECTS OF CARBOHYDRATE METABOLISM IN HEPATIC DISEASE

Evidence presented by I. S. Ravdin, Philadelphia (*Journal A. M. A.*, Oct. 19, 1929), indicates a deficiency of the carbohydrate metabolism in hepatic disease. The decreased ability of the injured liver cells to synthesize and store glycogen is of especial significance to the surgeon. This absence of glycogen occurs at the time when it is most needed. The liver cells regenerate rapidly on a high carbohydrate diet. They will not regenerate to a similar extent on a diet low in carbohydrate. Available evidence does not seem to indicate that insulin is necessary with dextrose in patients suffering from common duct obstruction unless there is evidence that there exists also a deficiency of the internal secretion of the pancreas. Dextrose after operation is of as much value as before operation, if not more. Dextrose causes a reduction in the coagulation time. It is apparently more effective in this regard than calcium chloride. Dextrose is preferable to epinephrine in postoperative "liver shock." In order for the dextrose given intravenously to be utilized it must be injected slowly. Dilute solutions are preferable to small amounts of markedly hypertonic dextrose. The injected dextrose is better utilized in the patient who is not dehydrated.

"COUNT THAT DAY LOST, WHOSE LOW DESCENDING SUN, SEES BY THY HAND, NO USEFUL LABOR DONE!"

has been a constant *precept* with us—as a guide for our *daily* activities—and this we *have magnified by 365 times for the YEAR!*

THEREFORE, it becomes fitting, with the beginning of the New Year, we should *"TAKE STOCK"* and determine whether any *"useful labor"*—by which we mean not only *"routine, well accomplished"*—but, more especially,

ACTIVITIES IN WHICH WE HAVE *ADVANCED THE CAUSE OF MEDICAL SCIENCE*—can be scored to our credit, as the result of our last 12 months work.

WE ARE, THEREFORE, SATISFIED TO NOTE THAT WE HAVE, DURING 1929, *ADDED NEW TESTS, OR IMPROVED ON OLD PROCEDURES IN VARIOUS WAYS*—e.g.,—

ASCHEIM-ZONDEK PREGNANCY TEST—after about a year's research thereon.

FRANK-GOLDBERGER TEST FOR OVARIAN FUNCTION—after personal investigation at the Mt. Sinai Hospital, New York, supplementing previous research.

STERILITY TESTS—Improved Examinations (*CO₂ insufflations* with and without atropine; *Lipiodol instillations* with X Ray; *Huehner test, etc., etc.*) after personal study at Clinic of Dr. Meaker, Boston and Office of Dr. Rubin, New York, supplementing several years previous success

GLUCOSE METABOLISM INVESTIGATIONS—with *Comparative "Graphs"* of Blood Sugar in *"Glucose Tolerance Tests"*—made on a strictly *"Physiological Basis"*

Besides the above, we have also made *improvements* in our

BASAL METABOLISM ROUTINE—which was already more complete than furnished by any other Laboratory and of the highest and proved accuracy!

FECES EXAMINATIONS—with *Quantitative determinations of Reaction* and *improved Bacteriological Technique*—enabling *"diagnoses"* in several conditions that would otherwise have gone unrecognized—and which, we KNOW would not have been diagnosed by others—for a new process—invented by US was used.

When you note the above and remember our previous achievements:—

FIRST IN CHICAGO to *Demonstrate the Treponema Pallidum: Introduce the Wassermann and the Kahn Tests: Prepare Autogenous Vaccines RIGHT* (according to the method of Wright) and to apply them to the *CURE of Bronchial (and other) Asthmas*; to other *"anaphylactic conditions"*, e.g., *Rhinnorrhoea, Angioneurotic Edema, Idiopathic Urticaria, Mucous Colitis, etc., etc.*; to *Enterointoxication* and the various ills that follow in its wake, etc.

WE BELIEVE THAT WE HAVE GIVEN THE PHYSICIANS OF CHICAGO
A MOST COMPLETE SERVICE

IF YOU BELIEVE—that the Institution which was the *first* to fight for the *elimination of unqualified Laboratories and Unqualified Laboratory Workers*—the Institution that is still the leader in the fight to *eliminate false and unethical advertising of Laboratories*—the Institution that has made its own advertising an *"Educational Program"* to acquaint Physicians with the new and useful in *"Diagnostic Methods"* and whose advertising has been highly commended by the leading advertising specialists of the world—

IF YOU BELIEVE—that the Institution operating on the basis of *"QUALITY"* and NOT on the basis of *"cut rates"* which necessitate *"slam bang"* methods that jeopardize the health and life of your patients, your reputation and the reputation of the *"Profession"*—

IF YOU BELIEVE—that the only Institution that dares to *"GUARANTEE"* its Reports and is ready and willing to stand back of that guarantee to the fullest extent—

IS WORTHY OF PERPETUATION AND DEVELOPMENT TO THE HIGHEST DEGREE, SO THAT IT MAY CONTINUE TO SERVE DISCRIMINATING PHYSICIANS WHO HAVE THE INTERESTS OF THEIR PATIENTS AT HEART

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BEFORE prescribing for any ailment the first question the physician asks the patient concerns the function of the bowels. A very necessary question, to be sure.

Then he must ask himself what corrective to prescribe to suit the condition, without interfering with the treatment.

Agarol is a safe answer to the question that the physician, of needs, must ask himself many times every day.

Agarol, the original mineral oil and agar-agar emulsion with phenolphthalein, is free from any artificial flavoring, sugar, alkali or alcohol. It is safe in diabetes, in gastric diseases, for children as well as adults. No excess of mineral oil to interfere with digestion or to cause leakage.

In addition, *gentle stimulation* of peristalsis, makes the result certain and the reestablishment of regular habits possible.

*One tablespoonful at bedtime
—is the dose*

Final decision on the true worth of Agarol rests with the physician. We will gladly send a twin package, with literature, for trial.

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BOILED milk for infant feeding has many advantages—yet it has many objectionable characteristics, too.

Klim, powdered whole milk, possesses all the favorable attributes of boiled milk—yet has none of its disadvantages.

For, first of all, Klim is safe, due to the absence of pathogens; yet not sterile. Its curd is soft and friable. Furthermore, at no stage in its making has it been subjected to temperatures higher than that of pasteurization (145 degrees F.). Klim, therefore, is as safe and as digestible as boiled milk, and, as it has not been oxidized, is the biological equal of ordinary raw milk.

It is more convenient for the mother to use, is more uniform and can be taken on trips or fed under any circumstances or conditions.

Literature and samples including special feeding calculator sent on request. Ask for Booklet 910.

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(Recognizing the importance of scientific control, all contact with the laity is predicated on the policy that KLIM and its allied products be used in infant feeding only according to a physician's formula.)

Merrell-Soule Powdered Milk Products, including Klim, Whole Lactic Acid Milk and Protein Milk, are packed to keep indefinitely. Trade packages need no expiration date.

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G. R. LOVE, M. S., M. D., Physician in Charge
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for CHRONIC DISEASES

Sanatorium and Hospital, Equipment and Personnel — Graduate nursing service—capacity limited to 35 patients. Fireproof buildings. Beautiful lake front grounds.

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The Summit Hospital was organized in 1923 with the expressed purpose of maintaining in a general sanatorium a department for nervous disorders, where such cases could be treated for physical as well as mental anomalies. We are subscribed to the idea that many of the neuroses are precipitated by physical defects which are correctable by accepted methods of Medicine and Surgery.

FOURTEENTH ANNUAL CLINICAL SESSION
of the
AMERICAN COLLEGE OF PHYSICIANS
Minneapolis, Minn., February 10-14, 1930

A POSTGRADUATE WEEK DEVOTED TO INTERNAL MEDICINE AND AFFILIATED SPECIALTIES, led by eminent national authorities. The Program consists of formal addresses, symposia, demonstrations, clinics and ward-walks, arranged through the cooperation of Minneapolis hospitals, societies and the University of Minnesota.

Specially Planned Addresses or Demonstrations

will be made by the following (partial list) :

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John Alexander, Ann Arbor
Walter C. Alvarez, Rochester
James Burns Amberson, Loomis
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Hilding Berglund, Minneapolis
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A. B. Brower, Dayton
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Benjamin J. Clawson, Minneapolis
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Seale Harris, Birmingham
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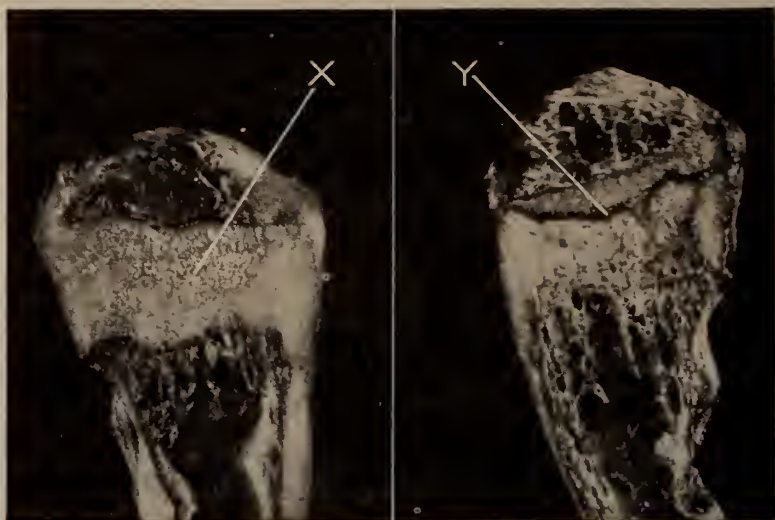
BOTH Vitamins Definitely Measured

How can vitamins be "measured?" What is meant by "standardized" when applied to Cod-liver Oil? Here, briefly, is the method followed in determining the vitamin content of Parke-Davis Standardized Cod-liver Oil:

To test for *vitamin A* potency the oil is given orally to young albino rats which have been fed on a diet free from vitamin A. We ascertain how much oil is needed daily to correct the induced typical eye condition (xerophthalmia) and to institute a specified rate of growth. The daily minimum amount of oil required to bring about this change constitutes one vitamin A unit.

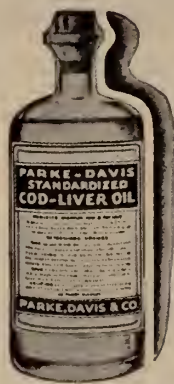
Every lot of Parke-Davis Standardized Cod-liver Oil must contain not less than 13,500 units of vitamin A in each fluid ounce.

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Illustrating "Line Test" method of standardizing Vitamin D content. At left, the leg bone of a rachitic rat showing induced decalcification area {X}. At right, healing has begun, as evidenced by initiation of recalcification at dark line {Y}.

Parke, Davis & Company was the first commercial laboratory to assay Cod-liver Oil for both vitamins A and D. Parke-Davis Standardized Cod-liver Oil is backed by years of research work in various phases of nutrition chemistry. Quite aside from its vitamin richness, this product has other distinguishing features which will appeal to you. It is clear, bland, and as nearly tasteless and odorless as a pure Cod-liver Oil can be. May we suggest that in prescribing Cod-liver Oil for your patients you specify the Parke-Davis product?



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ANEMIA

is now regarded as a deficiency disease, resulting from a deficiency of inorganic elements, or vitamins, or possibly other organic factors.

The logical treatment of Anemia demands a properly balanced mixture of metallic elements, including iron, in non-irritating, readily assimilable form with a diet rich in vitamin A.

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ENDOMIN TABLETS

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With Sodium Germanate.....	0.05 mg.

The dose is 1 to 3 tablets t.i.d., and treatment must be continued over a sufficient period of time.

Ample quantities of Endomin will be sent to physicians for clinical tests, upon request.

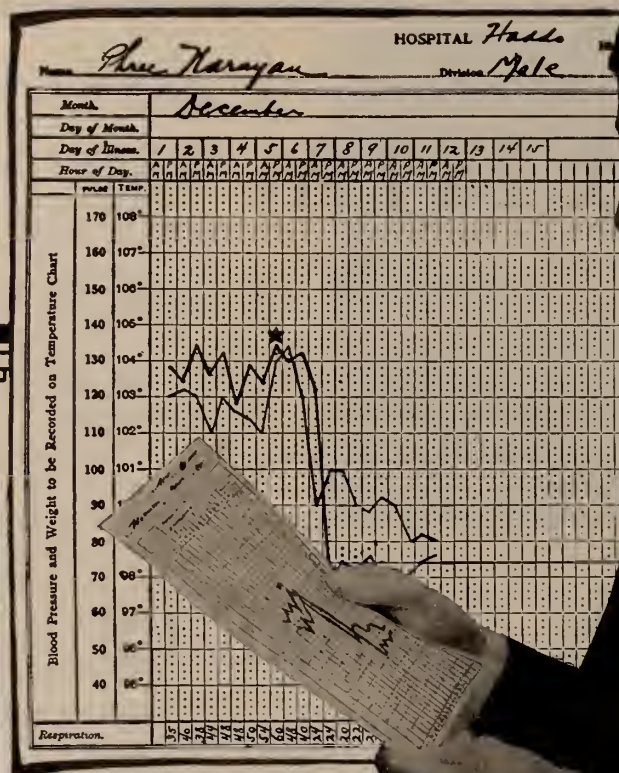
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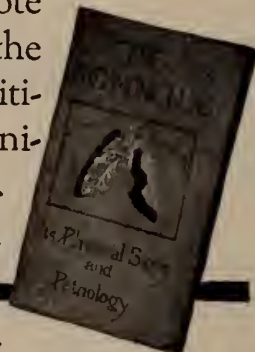


* Antiphlogistine applied. Note rapid defervescence. From Case Report—"Indian Med. Gaz.," Mar., 1928.

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Antiphlogistine
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ANTIPHLOGISTINE, through its marked decongesting action, will do much to sustain the circulation, relieve dyspnoea, combat the toxemia, promote resolution and assist the patient over the critical period with a minimum of disturbance.

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Clinical, Bacteriological, Serological and Pathological Examinations for Physicians

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The New Product Combining

Hemoglobin and **Liver Extract**
Hematopoietic Serum

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Administered by Mouth—No Contraindications

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Compounded at the laboratories of

CHAPPEL BROS., Inc.
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As a General Antiseptic

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Tincture of Iodine

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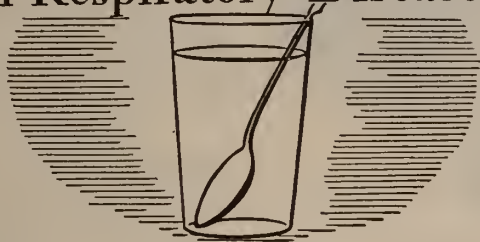
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220 Soluble

It stains, it penetrates and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning
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In Respiratory Diseases



Alka-Zane is a granular, effervescent salt of calcium, magnesium, sodium and potassium carbonates, citrates and phosphates. Dose, one teaspoonful in a glass of cold water.

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Established 1907 by Dr. Theodore B. Sachs

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An institution conducted by the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

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This psychoneurotic unit is a complete and separate hospital, elaborately furnished and fixtures.

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COMBINES the active and known therapeutic qualities of creosote and guaiacol with the nutritive properties of Liquid Peptonoids and is accordingly a thoroughly dependable product of definite quantities and recognized qualities as shown by the formula:

Each tablespoonful represents

ALCOHOL (By Volume)	12%
PURE BEECHWOOD CREOSOTE	2 min.
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PROTEINS (Peptones and Propeptones)	5.25%
LACTOSE AND DEXTROSE	11.3%
CANE SUGAR	2.5%
MINERAL CONSTITUENTS (Ash)	0.95%

It acts as a bronchial sedative and expectorant, exhibiting a peculiar ability to relieve *Bronchitis—acute or chronic*. It checks as well a persistent winter cough and without harsh or untoward effect. It is agreeable to the palate and acceptable to the stomach—with merit as an intestinal antiseptic.

Samples on request

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PLUTO WATER —IS THE CONSISTENT UNIFORMITY OF ITS COMPOSITION!

Bottled under scrupulously guarded conditions—scientifically controlled by our Research Laboratory—PLUTO WATER'S useful Salines, in unvarying proportions are always in perfect solution—Sterile and Safe! The bottle is plainly marked in units of 2 ounces—just like a graduated cylinder.

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AMERICA'S FAVORITE SPA—A magnificent monument to the Reputation and Achievements of PLUTO WATER. Here you will receive complete co-operation in the care, observation and treatment of ambulatory patients who appreciate understanding and safe attention. Facilities include carefully supervised and prescribed Mineral Waters, Baths, Recreation, Diets, etc.

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For Maximum Optical
Precision prescribe
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Comfort and Safety

Come with Soft-Lite Lenses more than with any other optical combination. When you write "Soft-Lite" in the prescription you write eye ease for your patient as long as the lenses are worn.

Glare is an irritant to all eyes—both young and old—especially if there is a refractive or muscular error.

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Your patients will appreciate the comfort of Soft-Lite, and you may prescribe it with the assurance that it is as safe as it is effective.

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CORRECTIVE **SOFT-LITE** PROTECTIVE



In both kinds of our **TAUROCOL Tablets** we use only the **purified** portion of the Natural Bile of the bovis family, and its two active salts, the Taurocholate and Glycocholate of Soda.

TAUROCOL COMPOUND TABLETS

With Digestive Ferments and Nux Vomica

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THE PAUL PLESSNER CO.

Detroit, Michigan



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dalwood Oil..	
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Haarlem Oil....	
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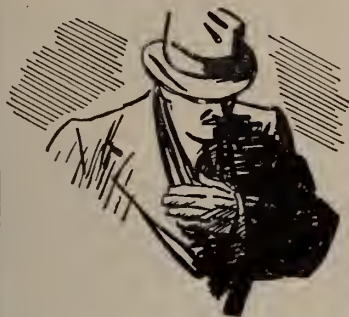
Two Perles with
or after each meal
as directed by the
Physician.

For treatment of subacute and chronic inflammation of mucous membranes, especially of the urinary tract.

SAMPLES FOR CLINICAL PURPOSES

THE PAUL PLESSNER CO.

Detroit, Michigan



A Helpful Hint

The dose of Guiatonic is one or two teaspoonfuls, 3 or 4 times a day, after meals. You can make the dose palatable by adding it to a half glass of milk to be sipped by the patient slowly or taken through a straw.

WILLIAM R. WARNER
& COMPANY, Inc.
113 West 18th Street
NEW YORK CITY

Giving mucus the air

"TIGHTNESS" of the chest means that germ-laden mucus is not eliminated as it should be. It is of first importance to promote expectoration, to "loosen" the cough.

That is the special mission of Guiatonic. It has been doing it to professional satisfaction for many years. Creosote and guaiacol, with the hypophosphites of iron, quinine, strychnine, manganese, calcium and potassium—that is Guiatonic.

Have you tried it? It works.

*We would be glad to send you
a twin package for trial.*

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...for Coughs and Respiratory Diseases

ZINC-BOROCYL

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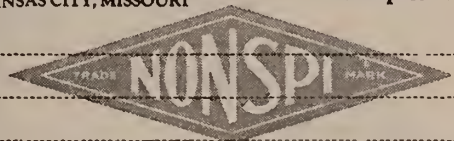
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(Continued on page 54)

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Book Reviews

POSTURE AND HYGIENE OF THE FEET. By Philip Lewin, M. D. October 21, 1929. New York. Funk & Wagnalls Company. 1929. Price 30 cents.

This volume covers a surprisingly large amount of ground. The chapter headings are: The A-B-C of Foot Hygiene, Proper Care of the Feet, Flatfoot and Its Correction, Disturbances of the Metatarsal Arch, Ankle Sprains, and Other Injuries. Even these can not give a full idea of the number of topics, covered, for there is information regarding choosing the right shoes, hosiery, garters, fallen arch, arch supports, sprained ankle, etc., including the most common foot-troubles, as corns, calluses, bunions, ingrown toenails, etc.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 13, No. 3. (New York Number, November, 1929.) Octavo of 272 pages with 58 illustrations. Per Clinic year, July, 1929, to May, 1930. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

The contributors to this number are Drs. Baldwin, Brock, Brooks, Bullowa, Cannon, Caro, Draper, Elwyn, Goldbloom, Harris, Held, Jessup, Lintz, Merwarth, Pardee, Pugh, Ramierz, Riordan, Tenney, Weiss.

THE VOLUME OF THE BLOOD AND PLASMA IN HEALTH AND DISEASE. By Leonard G. Rowntree, M. D., and George E. Brown, M. D., Division of Medicine, The Mayo Clinic and The Mayo Foundation, Rochester, Minnesota, with the Technical Assistance of Grace M. Roth. 12 mo. 219 pages, illustrated. Philadelphia and London. W. B. Saunders Company. 1929. Cloth, \$3.00 net.

This volume presents the evidence which has accumulated within the last few years relative to observations made with the dye method of studying blood pathology. It deals with the value of certain dyes, the technique used in the dye method, the dye in normal subjects in various diseases of the special organs and endocrine glands, etc.

SYNOPSIS OF THE PRACTICE OF PREVENTIVE MEDICINE AS APPLIED IN THE BASIC MEDICAL SCIENCES AND CLINICAL INSTRUCTIONS AT THE HARVARD MEDICAL SCHOOL. Cambridge Harvard University Press. 1929.

This work is not intended as a text or reference book, but as a depository for such points as seemed of possible value in emphasizing in connection with the curriculum with the Harvard Medical School, the importance of preventive medicine for the practitioner.

THE BLOOD PICTURE AND ITS CLINICAL SIGNIFICANCE (INCLUDING TROPICAL DISEASES). A GUIDE BOOK ON THE MICROSCOPY OF BLOOD. By Professor Dr. Victor Schilling. Translated and edited by R. B. H. Gradwohl, M. D. Seventh and eighth revised edition

with 44 illustrations and 4 colored plates. St. Louis. The C. V. Mosby Company. 1929. Price, \$10.00.

This work marks a great advance in practical hematology. The book is based upon the author's practical experience. In this edition sections on blood typing has been added. The work has been brought strictly up-to-date and meets the needs of the all around progressive physician.

PREVENTION OF DEFORMITIES IN CHRONIC ARTHRITIS

The deformities of arthritis are more serious, as far as the patient is concerned, than any other feature of the disease, since they persist and frequently get worse after the arthritis has ceased unless they are prevented. It is this feature of the treatment of arthritis which Loring T. Swaim and John G. Kuhns, Boston (*Journal A. M. A.*, Dec. 14, 1929), emphasize particularly in this paper, believing that prevention is possible. As to the methods of prevention in general, their experience has given them a few rules, which are that: (a) When a case of arthritis is first seen, a careful appraisal of the condition of the various joints should be made and steps should be taken at once to prevent the usual deformities from occurring. (b) Throughout the treatment constant vigilance must be exercised to prevent the assumption of positions likely to lead to deformity. (c) The physician should also bear in mind that rest and exercise of the joint are essential to its well being. (d) Motion should be encouraged in all stages of the disease but must never be forced; the activity should consist wholly of the patient's attempt to do what he can in the normal use of the joint. (e) Rest in a position least likely to cause strain or contracture should be secured when the joint is not in use, particularly at night, as position during sleep is most important. Each joint is taken up in turn and the treatment employed by the authors to prevent or lessen deformities is detailed.

GONORRHEA OF ANUS AND RECTUM

Of the 1,218 rectal cases seen by Herbert T. Hayes, Houston, Texas (*Journal A. M. A.*, Dec. 14, 1929), in seventy-five, or 6.2 per cent, there was infection with gonorrhea. The mode of infection was unnatural sex practices in four men, ruptured prostatic abscess in one, infection in two children from carelessness of attendants, accidental infections of unknown origin in three male adults, and, in the remaining sixty-five, presumably auto-inoculation. Hayes concludes that gonorrhea of the anus and rectum is of frequent occurrence and is often overlooked by proctologists and urologists. Gonorrheal proctitis is much more frequent in women than in men. Auto-inoculation is the chief mode of infection and stricture of the rectum is the most serious complication encountered. It is rarely found in the white race but is frequent in the colored.



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(Continued from page 50)

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Woodford	W. Morrison, Minonk.....	S. M. Burdon, Low Point.

Book Reviews

GRENZ RAY THERAPY. By Gustav Bucky, M. D., New York. With contributions by Dr. Otto Glasser, Cleveland, and Dr. Olga Becker-Manheimer, Hamburg. With forty illustrations in the text. Translated by Walter James Highman, M. D., New York, New York. The Macmillan Company. 1929. Price \$2.00.

The theory of Grenz Ray Therapy advanced by Dr. Bucky has gained wide credence in Europe. It is the feeling of the translator that American readers will want to apprise themselves of the principles underlying Grenz Ray Therapy as set forth by Dr. Bucky.

THE NEWER KNOWLEDGE OF NUTRITION. By E. V. McCollum, Sc.D., and Nina Simmonds, Sc.D. Illustrated. Fourth edition. Rewritten. New York. The Macmillan Company. 1929. Price \$5.00.

In this work the general plan of the third edition has been preserved, the book has been essentially rewritten. The latest experimental work has been added and the work brought strictly up-to-date.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 9, number 5. (Philadelphia Number—October, 1929) 299 pages with 111 illustrations. Per Clinic year (February, 1929, to December, 1929.) Paper, \$12.00; Cloth, \$16.00. Philadelphia and London.

The contributors to this number are Doctors Babcock, A. E. & F. A. Bothe, Boykin, Brown, Burden, Carnett, Case, Crossan, Davis, Dever, Eliason, Fleming, Flick, Grant, Hinton, Klopp, Manges, Nassau, Norris, Smith, Jr., Speese, Thomas.

PRACTICAL MASSAGE AND CORRECTIVE EXERCISES WITH APPLIED ANATOMY. By Hartvig Nissen. Fifth edition. Revised and enlarged. Illustrated with 72 original half tones and line engravings. Philadelphia. F. A. Davis Company. 1929. Price, \$2.50 net.

PRACTICAL TREATISE ON DISORDERS OF THE SEXUAL FUNCTION IN THE MALE AND FEMALE. By Man

Huhner. M. D. Third edition. Philadelphia. F. A. Davis Company. 1929. Price, \$3.00 net.

This edition is an enlargement on the previous one, it contains an entirely new chapter on dysmenorrhea.

PETTIDONE'S TEXTBOOK OF PHYSIOLOGICAL CHEMISTRY. With experiments revised and rewritten by J. F. McClelland, Ph.D. Fourth edition. St. Louis. The C. V. Mosby Company. 1929. Price, \$3.75.

THE MEDICAL RECORD VISITING LIST OR PHYSICIAN'S DIARY FOR 1930, REVISED. New York. William Wood & Company. Price, \$2.00 net.

This handy physician's companion reappears in up-to-date form. It provides for sixty patients per week. It contains a vast fund of information that the busy physician will appreciate in his every day practice. The contents of the diary is as follows: a calendar; estimation of the probable duration of pregnancy; approximate equivalents of temperature, weight, capacity, measure, etc.; maximum adult doses by the mouth, in apothecaries' and decimal measures; prescription of narcotics; drops in a fluid dram; solutions for subcutaneous injection; contagious diseases diagnostic table; miscellaneous facts; treatment of poison and other emergencies; artificial respiration; signs of death; hints on the writing of wills; table of signs; visiting list with special memoranda; consultation practice obstetric engagements; record of obstetrical practice; record of vaccinations; register of deaths; nurses' addresses; addresses of patients and others, cash account.

MODERN METHODS OF TREATMENT. By Logan Clendenning, M. D. With chapters on special subjects by H. G. Anderson, M. D., J. B. Cowherd, M. D., H. P. Kuhn, M. D., Carl O. Richter, M. D., F. C. Neff, M. D., E. H. Skinner, M. D., and E. R. de Weese, M. D. Third edition. St. Louis. 1929. C. V. Mosby Company. Price, \$10.00.

This work furnishes an outline of all the methods of treatment used in internal medicine. This edition has been carefully revised. The general plan and purpose of the book has not been changed.

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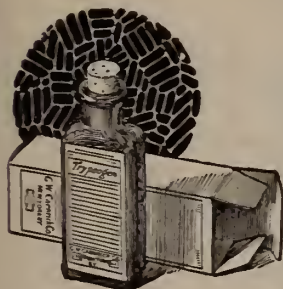
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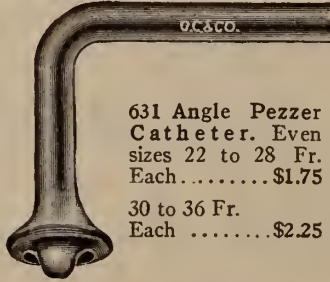
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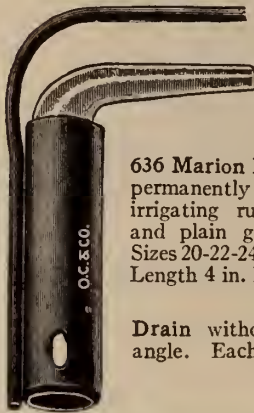
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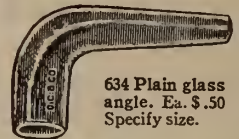


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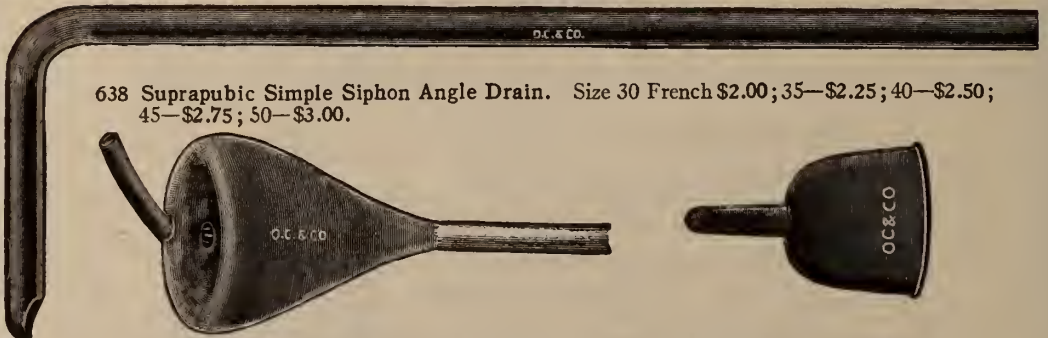
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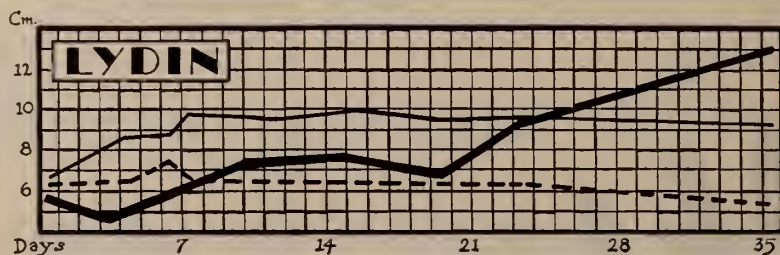
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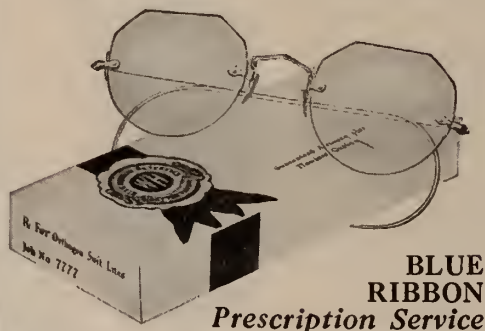
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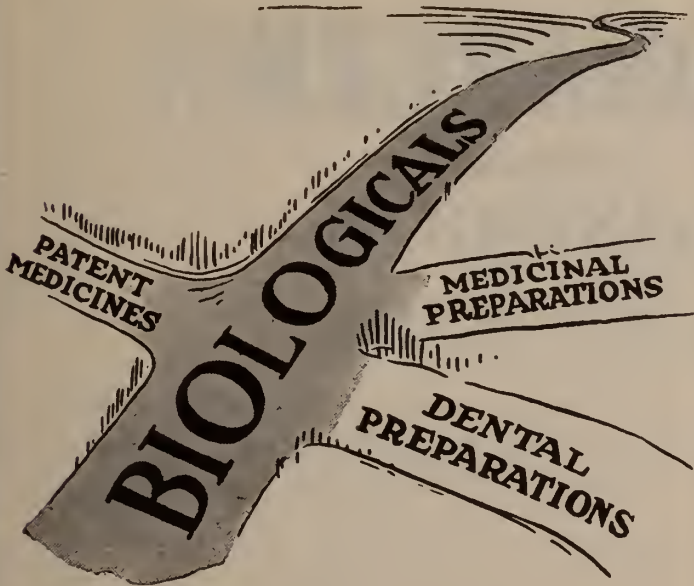


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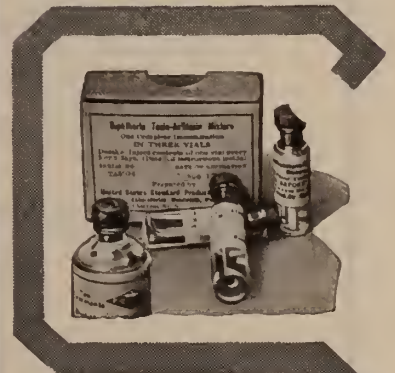


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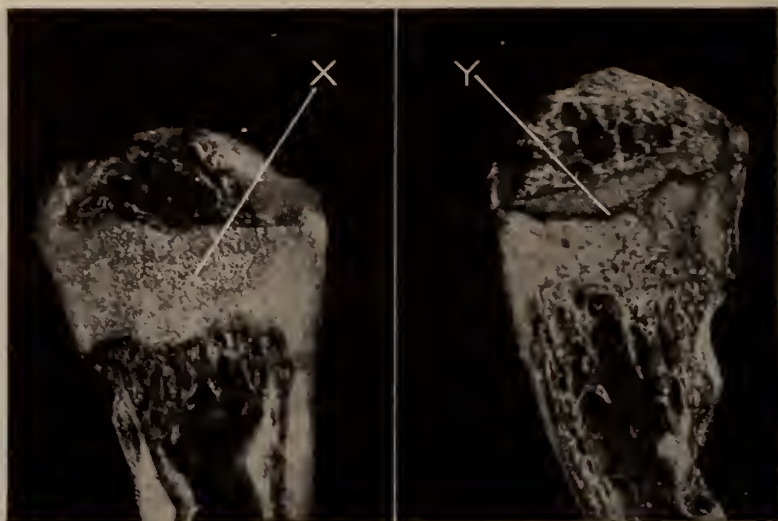
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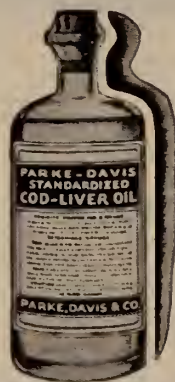
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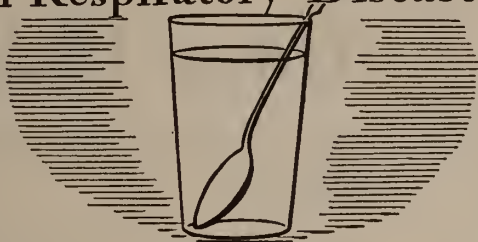
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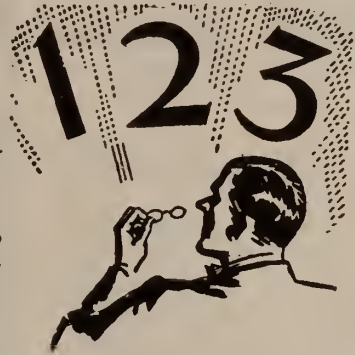
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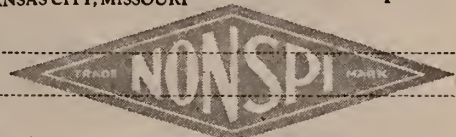
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Book Reviews

STONE & CALCULOUS DISEASE OF THE URINARY ORGANS. By J. Swift Joly, M. D. With 189 illustrations in the text and 4 colored plates. St. Louis. The C. V. Mosby Company. 1929. Price, \$16.00.

This is the first English book on stone to appear during the last twenty years. All the recent descriptions of calculous disease occur either in works on general surgery, or in textbooks on urology, where they were much curtailed for want of space. A book dealing exclusively with urinary calculi was therefore needed.

The arrangement of the subject has been kept simple as possible. There is a brief historical sketch, a chapter on deformation and general etiology of stone; a chapter each on stone in the kidney, ureter, bladder, and a chapter on prosthetic calculi.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 9, No. 6. (Lahey Clinic Number—December, 1929) 188 pages with 51 illustrations, and complete Index to Volume 9. Per Clinic year (February, 1929, to December, 1929.) Paper, \$12.00; Cloth, \$16.00. Philadelphia and London.

The contributors to this number are: For surgery: Lahey, Clute, Mason, Cattell, Adams; for anasthesia: Sise and Woodbridge; gastro-enterology: Jordan and

Kiefer; medicine: Hurxthal and Menard; orthopedics: Haggart; neurology: Hix; eye, ear, nose and throat: Hoover.

THE LIFE OF SIR THOMAS CLIFFORD ALBUTT. By Sir Humphrey David Rolleston Bart. London. Macmillan & Company. 1929. Price, \$6.00.

This work is a study of the life of this eminent physician and father, it is also a review of the progress of medicine in the last half of the nineteenth century and the first quarter of the 20th.

HEMORRHOIDS. INJECTION TREATMENT AND PRURITUSANI. By Lawrence Gold-Bacher, M. D. Illustrated with 31 half tones and line engravings, some in colors. Philadelphia. F. A. Davis Company. 1930. Price \$3.50.

This work presents to the medical profession certain practical and readable information regarding hemorrhoids and pruritusani.

CLINICAL OBSTETRICS. By Paul T. Harper, M. D. Illustrated with 83 plates of engravings (250 figures) with legends and charts. Philadelphia. F. A. Davis Company. 1930. Price \$8.00 net.

This work gives detail description of the natural phenomena of parturition, with minute consideration of the abnormality of pregnancy, labor, and the puerium to which frequency of occurrence and the responsibility

(Continued on page 50)

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Book Reviews

(Continued from page 46)

ties involved give prominence, and with exposition of the operative procedures applicable to them.

IDEAL MARRIAGE, ITS PHILOSOPHY AND TECHNIQUE.

By Th. H. Van De Velde, M. D. Translated by Stella Brown. Introduction by J. Johnston Abraham, M. D. London. William Heinemann. 1928.

This book treats on the physical problems of marriage.

COCCIDIOIDAL GRANULOMA

Newton Evans and Howard A. Ball, Los Angeles (*Journal A. M. A.*, Dec. 14, 1929), analyzed fifty cases of coccidioidal granuloma and found that there are three main clinical types of patients. 1. Patients whose pulmonary infection is heavily seeded, the pathologic process being extensively pulmonary, and who usually die before many or extensive somatic lesions have time to develop. 2. Patients whose pulmonary infection is moderately seeded, who many times have pulmonary symptoms to which little attention is paid, but who develop multiple somatic lesions in which the organisms multiply and which become extensive with consequent blood-borne re-

turn infection to the lung, taking the form of military involvement, the duration of life usually varying around the average of this series—that is, nine months. 3. Patients in whom the pulmonary infection is very lightly seeded, who develop but one or two somatic lesions to which the body reacts to a degree that heals the lesion or causes it to become very chronic, such cases lasting for years or until resistance is so lowered that a lesion of sufficient activity can develop to cause a military pulmonary involvement. They conclude that the pathologist should choose or supervise the choosing of his material for diagnosis and that the roentgenologist may at times be of service in suggesting the diagnosis before it is suspected by the clinician.

A CARBON COPY

"Dat baby of you's," said Mrs. Jackson, "am de puffet image ob his fathah."

"Yas," answered Mrs. Johnson. "He am a reg'lar carbon copy."—*Journ. Am. Med. Editors' Assoc.*

ANATOMICALLY SPEAKING

Judge—"Where did the automobile hit you?"

'Rastus—"Well, Jedge, if I'd been carrying a license numbah it would hab busted to a thousand pieces."—*Puck.*

BASIC (VITAMIN) FEEDING IN TUBERCULOSIS

In a preliminary experiment made by Edgar Mayer, Saranac Lake, N. Y., and I. Newton Kugelmass, New York (*Journal A. M. A.*, Dec. 14, 1929), twenty patients between the ages of 22 and 33 years with far advanced pulmonary tuberculosis, who had failed to respond after two or three years of routine treatment, were maintained for six months on a special dietary regimen. The average dietary consisted of 3,500 calories, base-forming, low in sodium chloride and in animal protein and carbohydrate, but rich in fats and in vitamins. Eight patients gained substantially in weight; ten patients showed considerable diminution in the quantity of sputum but without loss of tubercle bacilli; four patients showed a loss of a slight constant fever, while two developed fever. Eight patients showed definite clearing in the lungs by physical and roentgen examination; two patients with intestinal tuberculosis lost the symptoms of this complication; one did not respond. A diminution in fatigue, pains in the chest and alimentary disturbances was conspicuous. The acid-base equilibrium of the patients studied before and after the dietary shifted toward the basic side. This result is in accord with similar studies made on rats maintained on acid-forming and base-forming diets, respectively.

STARVE THE RATS

Surgeon General Cumming is trying to enlist the people of this country in a campaign against rats. These rodents are a sanitary and economic menace. The control lies with the average householder. Experts can destroy rates in large numbers under certain conditions by the use of poisonous gases but the ordinary person may not use such destructive forces safely. The advice of the Surgeon General is to starve the rats by keeping food supplies beyond their reach and rat proofing dwellings and storehouses.

It is estimated that rats consume two hundred million dollars worth of food every year and destroy a like amount of property. As a menace to life during a twenty year period ending in 1923 over eleven million people in India died of bubonic plague. The principal agent in the spread of this disease is the rat. Rats are ubiquitous and filthy creatures of great fecundity.

We should ally ourselves with the Public Health authorities in fighting this enemy of health and economy.

THE KIND OF A DOG IT WAS

Sandy: "What kind of a dog is that ye've got, Mick?"

Mick: "He's an Airtight dog."

Sandy: "How come you gave him such a name?"

Mick: "Well, you see, his mother was an Airdale and his father was a Scotch-terrier."

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[Shakespeare, 1564-1616]



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Herman Hennell, M.D., in Arch. Int. Med., Oct., 1929, states:

"The clinical picture as well as the physical and roentgen signs are characteristic, and they are similar in all cases. The onset is usually sudden, with evidence of marked respiratory embarrassment and shock. The characteristic physical signs are: markedly diminished mobility of the involved hemithorax, narrowing of the interspaces, pulling in of the trachea, heart and diaphragm toward the affected lung; flatness to percussion, harsh or absent breath sounds, and no rales over the affected lung. The roentgen examination reveals a dense homogeneous shadow where the atelectasis exists, and is corroborative of the displacement of the trachea, heart and diaphragm toward the affected lung."

DIET IN DIABETES

In the Am. J. Med. Sc., Oct., 1929, in an abstract of an article by Von Noorden, the following statement is made:

"The administration of the proper diet (in diabetes) is more difficult in the presence of insulin than it is without it. It is not correct to assume that a unit of insulin always assimilates a definite amount of carbohydrate. The patient should follow a strict diet even if the disease is present in the mildest form. The diet should be planned for each patient individually. The neglect of this principle would be as much a mistake as the failure to apply early therapy in tuberculosis and cancer. The determination of the proper diet with or without insulin is especially difficult in ambulatory patients. Cases in which synthalin proved to be a good substitute for insulin could almost always be well managed without synthalin or insulin. The beneficial

effect of foreign-body therapy with the administration of proteins is so far unproven."

ABSORPTION OF GLUCOSE FROM THE COLON

In the Dec. number of Surg. Gynec & Obst., R. W. McNealy, M.D., and J. D. Willems, M.D., show by experimental work on dogs that 5 per cent glucose solution is not absorbed in any appreciable amount from the colon, but is absorbed from the ileum, but tap water and normal saline solutions are absorbed rapidly from both colon and ileum.

PROGRESS IN GYNECOLOGY AND OBSTETRICS

In a review of the latest volume of the "Gynecological and Obstetrical Monographs" in Surg. Gynec. & Obst., Nov., 1929, E. L. Cornell, M.D., says:

"Many problems in pelvic inflammatory disease are still unsolved. Protein therapy and diathermy in properly selected cases seem to be of value.

"Little advance has been made in puerperal sepsis; serum is of no avail; surgery is questionable. The best active treatment should consist of removal of sutures and drainage of abscesses.

"Pleas are made for early recognition of malignant tumors of the uterus. . . . Radium plus surgery are still the greatest hope. The lead treatment of cancer (Blair Bell) plus X-ray, if necessary, seem to produce some good results."

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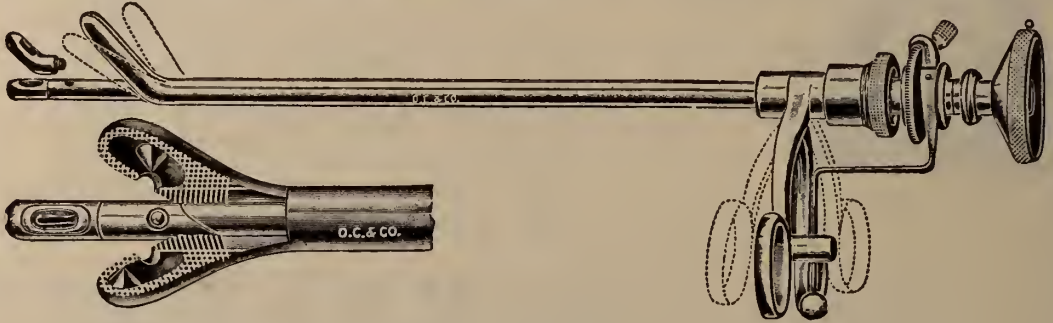
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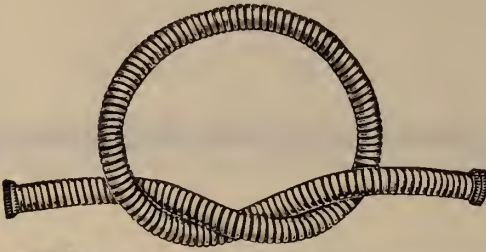
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
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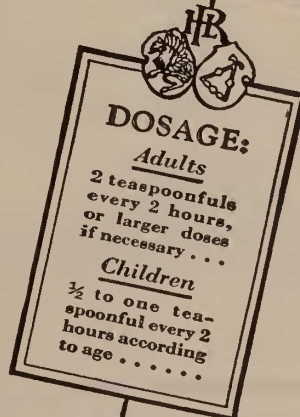
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
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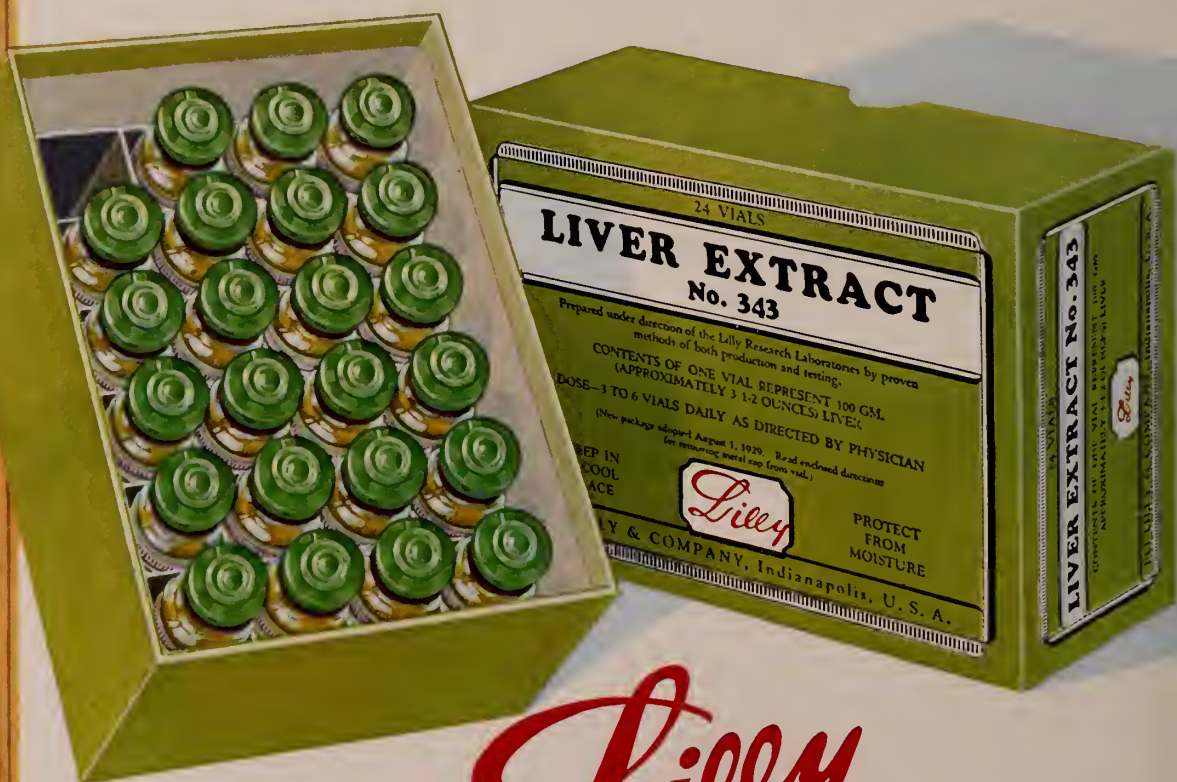
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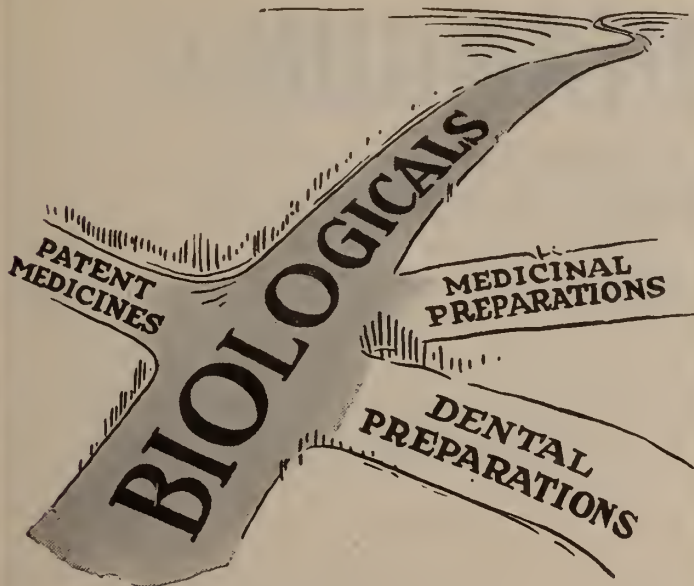
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*BiSoDoL is advertised
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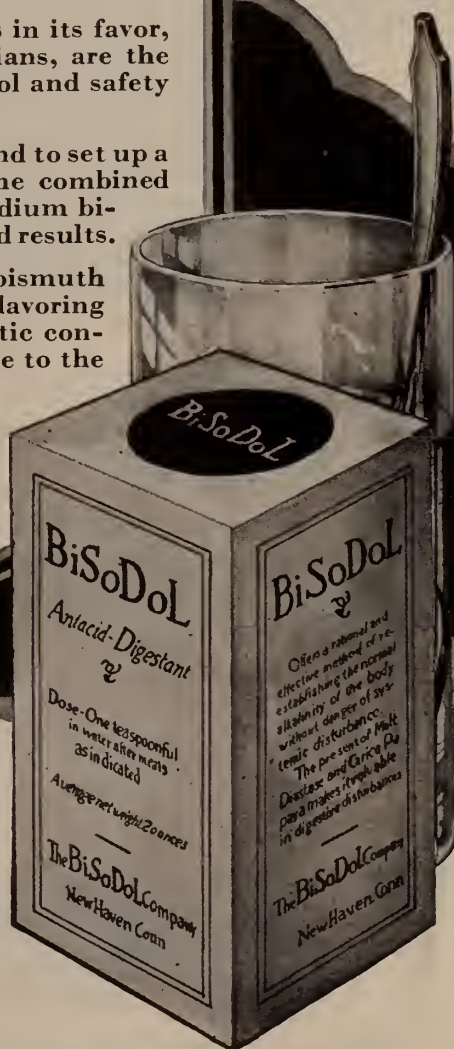
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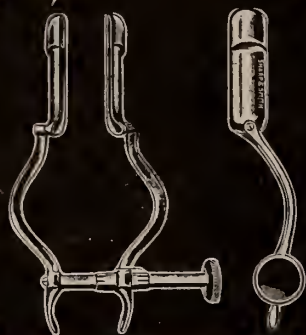
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Each tablespoonful represents

ALCOHOL (By Volume)	12%
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PROTEINS (Peptones and Propeptones)	5.25%
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CANE SUGAR	2.5%
MINERAL CONSTITUENTS (Ash)	0.95%

It acts as a bronchial sedative and expectorant, exhibiting a peculiar ability to relieve *Bronchitis—acute or chronic*. It checks as well a persistent winter cough and without harsh or untoward effect. It is agreeable to the palate and acceptable to the stomach—with merit as an intestinal antiseptic.

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Antiseptic and Germicidal
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The Story of COD-LIV-X



WHEN the history of the vitamins is written at some future day, no small part of it will deal with the cod-liver oil concentrates of which Cod-Liv-X is the forerunner and so notable an example. For, notwithstanding the universal recognition of the importance of cod-liver oil as the world's one practical source of supply for the fat-soluble vitamins, generations of physicians have signally failed to popularize it as a routine prophylactic in the home because of the public's antipathy to its nauseous taste.

The value of the oil as an antirachitic, its ability to increase body resistance to many diseases and infections; even its effect upon longevity, with its other innumerable benefits to mankind cannot equal the objections in the public mind to the physical properties of a fish oil. Meanwhile we are living in an age which is making scientific history for it is just eighteen months since Cod-Liv-X was first offered and about three and a half years since the research was begun which led to the perfection of this splendid prophylactic agent.

WHILE world-wide confidence in cod-liver oil therapy in rickets, tetany, and the so-called "wasting diseases" has been the heritage of the physicians for more than a century, it is only within recent years that any scientific reason could be shown for its accredited virtues. Recognition of the existence of the two fat-soluble vitamins,—Vitamin A, the builder, the promoter of growth and well-being, and increased resistance to infection; and of Vitamin D, the antirachitic, supplied the *raison d'être*.

Research has since shown that these two vitamins, representing practically the sum total of cod-liver oil values, are combined with but a small fraction of the oil that remains unchanged after its saponification. This unsaponifiable, vitamin-bearing fraction is separable through the use of suitable agents. Separation of Vitamin D from the oil by this method is perfectly practical, but the extremely unstable Vitamin A was almost wholly lost until the improved

processes developed for Cod-Liv-X were perfected.

Cod-Liv-X is the culmination of more than three years of intensive research in the Health Products Laboratories, supervised by research workers of national reputation in this field. To their efforts is accredited the development of probably the first practical method and apparatus for maintaining the potency of vitamin A, both throughout the manufacturing process, and in the finished wafer. For practical purposes, Cod-Liv-X should be considered as representing the Vitamin A and D potency of a rigidly tested cod-liver oil, but free from the disagreeable characteristics that have made the oil the bugbear it is.

Cod-Liv-X wafers are standardized to an equivalent of not less than a teaspoonful of a biologically tested U. S. P. oil. But it is not only at the time of manufacture that Cod-Liv-X wafers are so tested,—they are re-tested at intervals for potency and stability, so that vitamin potency and dependability are definitely assured.



COD-LIV-X is not only a dependable antirachitic,—it is a potent Vitamin A concentrate as well. It is the first cod-liver oil concentrate systematically tested over long periods of time for both Vitamin A potency and stability. Cod-Liv-X offers a greater degree of accuracy and stability than cod-liver oil itself. It is as convenient to administer and as palatable as candy. The objectionable odor and taste are eliminated without loss of value.

7 Facts You Should

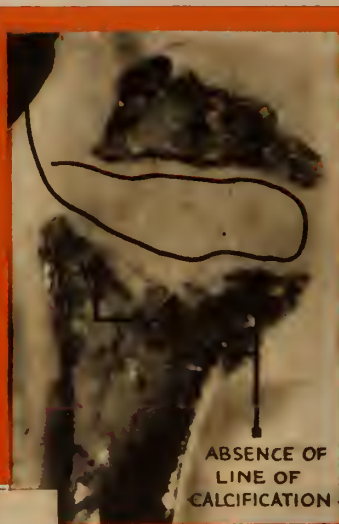
Vitamin A

VITAMIN A is the builder, the promoter of nutrition and general well-being. To it we must look for increased resistance to disease and infection, notably infections of the air passages and mucous linings.

Vitamin A deficiency is characterized by retardation of growth and development, loss of appetite, and physical weakness. It increases susceptibility to infections, particularly those of the eyes, ears, sinuses, air passages, kidneys, and bladder. It influences reproduction unfavorably and brings about dullness and perversion of the special senses. It is often also the forerunner of secondary anemia. Rose, of Columbia, believes, that in view of its great importance to the individual from infancy to old age, and the body's unusual capacity for storing it, a liberal supply of it throughout life should be considered as the most desirable form of life insurance.



The importance of the biological assay becomes daily more apparent in relation to the standardization of cod liver oil products. Conflicting units make it hard to determine the exact status of an oil or a concentrate. The only real surety the physician or patient has is in the rigidity of the biological standardization. In this measurement of potency of Vitamin A and D, Cod-Liv-X ranks high. Not only are xerophthalmia and weight both used as criteria for Vitamin A content but the careful inspections of rat tibias provides positive proof of re-calcification under Cod-Liv-X administration and the presence of Vitamin D in effective amount. *Above:* one of the scientific staff examining a rat's bone.



Left: A typical split tibia of a rat showing rachitic lesions. Note the wide band of cartilage and degeneration in the shaft.

ABSENCE OF
LINE OF
CALCIFICATION

Right: In this bone re-calcification has progressed well. The rachitic condition is healing nicely under the administration of Cod-Liv-X.



LINE OF
RE-CALCIFICATION



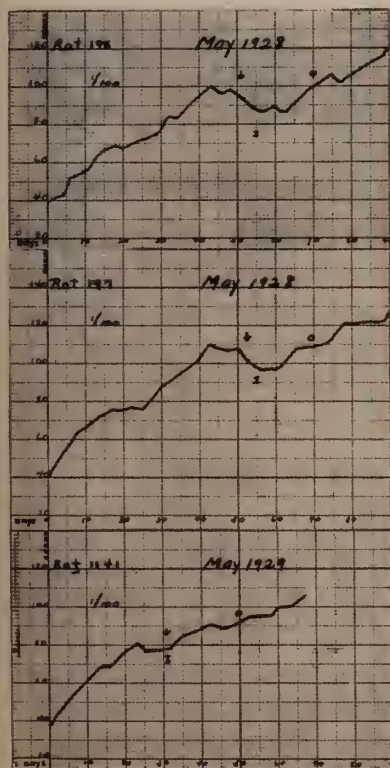
Above: At the left note the normal eye of the rat and at the right the beginning of xerophthalmia which indicates Vitamin A deficiency.

Know about COD-LIV-X

Vitamin D

VITAMIN D is the antirachitic, the controlling factor of the phosphorous-calcium equilibrium and the promoter of mineral metabolism. Diets deficient in Vitamin D lead to nervous instability and muscular weakness, with evidences of rachitic lesions or tetany. Its complete absence from the diet will certainly result in rickets and skeletal deformities. According to Eliot, after a survey made of the prevalence of rickets in New England, some evidence of rachitic lesions is almost universally present in the child population of that great commercial district. Vitamin D is the great rachitic prophylactic which should be a routine in every home with a child population.

Repeated assays at intervals have been conducted on the first Cod-Liv-X concentrate since its production 18 months ago. In this chart is a running record of the results of these tests which shows that there is no evidence of Vitamin A loss since the concentrate was first produced.



Below: A technician about to weigh rats. A step in the Vitamin A assay.



Above: The large, sunny breeding laboratory in which a special strain of rats is being produced for Vitamin assays.

Left: The testing laboratory.

COD-LIV-X is standardized by the generally accepted methods of biological assay. The McCollum line test is used for Vitamin D and the Vitamin A test is made both according to weight and the development and control of xerophthalmia. The latter is not specified in assays of oil according to the U. S. P. But we check with it to assure full Vitamin A potency. Furthermore, Cod-Liv-X tablets eighteen months old have been tested regularly and there is no evidence of loss of vitamins. The concentrate is made in our own Gloucester plant where the oil is received direct from the fisheries. From $\frac{1}{2}$ to 1 lb. of the concentrate is the maximum yield from 100 lbs. of oil.

COD-LIV-X

A Dependable Safeguard Against Winter Ills

TISDAIL and Brown in Toronto, and Dorno in the Swiss Alps, found the prophylactic and therapeutic effect of summer sunshine to be from 8 to 10 times greater than that of winter sunshine. Sherman concluded that the level of intake of Vitamin A markedly influences susceptibility to colds and other respiratory infections. We may conclude that the prevalence of winter "colds" is in some way related to the observed deficiency of Vitamin A.

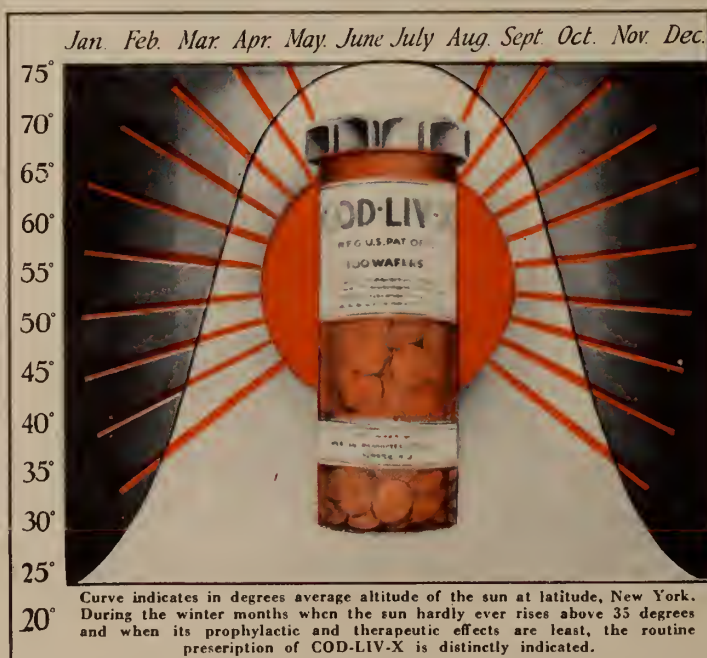
A supplementary supply of vitamins, both A and D, during the months of decreased sunlight, is thus clearly indicated. Cod-liver oil is the standard source of supply of Vitamins A and D. But it is frequently a problem to get the average child or adult to take the very unpalatable cod-liver oil, as such.

COD-LIV-X is concentrated cod-liver oil in tasty, attractive, palatable wafer form, each wafer embodying stable, measurable amounts of vitamins, both A and D. In COD-LIV-X the physician has available a routine prophylactic against the many diseases and infections common during the cold months of the year.

What Cod-Liv-X Is

1. *It is as dependable an antirachitic both for prophylaxis and treatment as the carefully selected, biologically tested cod-liver oil from which it is made.*
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Book Reviews

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 13, No. 4. (Philadelphia Number, January, 1930.) Octavo of 301 pages, illustrated. Per Clinic Year, July, 1929, to May, 1930. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

The contributors to this number are Drs. Andrews, Arnett, Clark, Clerf, Cottrell, Duncan, Farley, Fits, Hugh, Funk, Cohen, Giddings, Glen, Gowen, Griffith, Hayman, Jones, Leopold, Miller, Piersol, Polk, Riesman, Robertson, Rodis, Rose, Shay, Small, Steinfield, Stroud, Talley, Torrey, Tumen, Weiss, Wilmer, Wolferth, Wood.

DISEASE AND THE MAN. By George Draper, M. D. New York. The Macmillan Company, 1930. Price, \$4.50.

In this volume the author develops that hypocritical trend of modern medicine which requires one to study not only the disease but the man. The author's findings open up a field of research which offers fascinating possibilities for future development and diagnostic application.

A TEXT-BOOK OF PHYSIOLOGY FOR NURSES. By Wm. Gay Christian, M. D., and Charles C. Haskell, M. D. Second edition. St. Louis. The C. V. Mosby Company. 1929. Price, \$2.00.

NURSING AND INEMERGENCIES. By Jacob K. Berman, M. D. With one hundred nine illustrations. St. Louis. The C. V. Mosby Company. 1929. Price, \$2.25.

This book is the result of a course of lectures given in the Indianapolis City Hospital over a period of four years.

GETTING WELL AND STAYING WELL. By John Potts, M. D. Second edition. St. Louis. The C. V. Mosby Company 1930. Price, \$2.00

In this edition the author makes numerous changes in the original text. This edition will be found of great aid to physicians, nurses and patients.

THE SYMPTOM OF VISCERAL DISEASE. By Francis Marian Pottenger, M. D. Fourth edition with eighty-seven text illustrations and ten color plates. St. Louis. The C. V. Mosby Company. 1930. Price, \$7.50.

In this edition many chapters have had extensive additions made to them. A new chapter on pharmacologic and clinical test for sympathicotonia and parasympathicotonia has been added.

BACTERIOLOGY FOR NURSES. By Harry W. Carey, M. D. Third revised and enlarged edition. Illustrated with forty-three engravings and one color plate. Philadelphia. F. A. Davis Company. 1930. Price, \$2.35.

The third edition of this book has been rewritten and enlarged. The work is intended for both a text book as well as a reference work.

(Continued on page 54)

**"SHADOWS HUGER
than the shapes that cast them"**

[Alfred, Lord Tennyson, 1809-1892]

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Book Reviews

(Continued from page 52)

ESSENTIALS OF MEDICAL ELECTRICITY. By Elkin P. Cumberbatch. Sixth edition, revised and enlarged with eleven plates, 116 illustrations. St. Louis. The C. V. Mosby Company. 1929. Price, \$4.25.

This edition has been almost entirely rewritten and many additions and alterations have been made and the work has been brought strictly up to date.

ROENTGENOGRAPHIC TECHNIQUE. By Darmon Artelle Rhinehart, M. D., with 150 illustrations. Philadelphia. Lea & Febiger. 1930.

This work is intended as a manual for physicians, students and technicians. The author particularly has brought forward the needs of medical students, Roentgen Ray technicians and those of physicians doing this work for themselves or others.

PRACTICAL PSYCHOLOGY AND PSYCHIATRY. By C. B. Burr, M. D. Sixth edition, revised and enlarged, with illustrations. Philadelphia. F. A. Davis Company. 1930. Price, \$2.75 net.

This work should prove a handy manual for use in training schools; for attendants and nurses and in medical classes, and as a ready reference for practitioners and students.

TONSIL SURGERY. By Robert H. Fowler, M. D. With 103 illustrations, including 10 full page color plates. Philadelphia. F. A. Davis Company. 1930. Price, \$10.00.

This work is based on a study of the anatomy of the tonsil. The improved tonsillectome which Dr. Fowler presents is the result of a thorough understanding of the "anatomy of the tonsil and infected tissue."

RESEARCH AND MEDICAL PROGRESS AND OTHER ADDRESSES. By Shelton Horsley, M. D. St. Louis. C. V. Mosby Company. 1929. Price, \$2.00.

The author's addresses deal largely with factors that make for medical progress and improvement in medicine and do not deal with technical details or surgical procedures.

A TEXT-BOOK ON ORTHOPEDIC SURGERY. By Willis C. Campbell, M. D., F. A. C. S., Professor of Orthopedic Surgery, University of Tennessee, College of Medicine, Memphis. Octavo volume of 705 pages, with 507 illustrations. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, \$8.50.

This work presents to the student, the general practitioner, the surgeon the subject of orthopedic surgery in a simple and comprehensive manner. The scope has been broadened to include fractures, dislocations and other surgical affections of the extremities not usually considered in text books on orthopedic surgery.

TREATMENT IN GENERAL PRACTICE. By Harry Beckman, M. D., Professor of Pharmacology, Marquette University Medical School, Milwaukee, Wis. Octavo

volume of 899 pages. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, \$10.00 net.

In this work the author has covered the therapeutic phase of treatment of disease from the viewpoint of physicians all over the world engaged in the various specialties. The author acting lively in an editorial capacity.

SURGICAL DIAGNOSIS. By 42 American authors. Edited by Evarts A. Graham, M. D., Professor of Surgery, Washington University Medical School. Three Octavo volumes, totalling 2,750 pages, containing 1,250 illustrations, and Separate Index Volume. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, \$35.00 a set. Volumes I and II are now ready. Volume III and separate index volume ready March 15, 1930.

This work should prove helpful not only to the surgeon but to the medical practitioner. In this work the author presents not only those aspects of disease which are generally included in text books of surgery under the subject of diagnosis, but also presents other aspects which will permit a better comprehension of the whole condition. Thus the question of etiology and pathology have been discussed.

RADIUM IN GENERAL PRACTICE. By A. James Larkin, M. D., with twenty-eight illustrations. New York. Paul B. Hoeber, Inc. 1929. Price, \$6.00.

This work is intended to make available for the general practitioner the elements of radium therapy in the daily practice of medicine. It furnishes readable, understandable data on radium indications, technic, reaction and progress in the lesions most commonly treated with this agent.

THE BABY'S FIRST TWO YEARS. By Richard M. Smith, M. D. With Illustrations. New and Revised Edition. Boston and New York. Houghton Mifflin Company. 1930. Price, \$1.75.

"I've just been reading some statistics here—every time I breathe a man dies."

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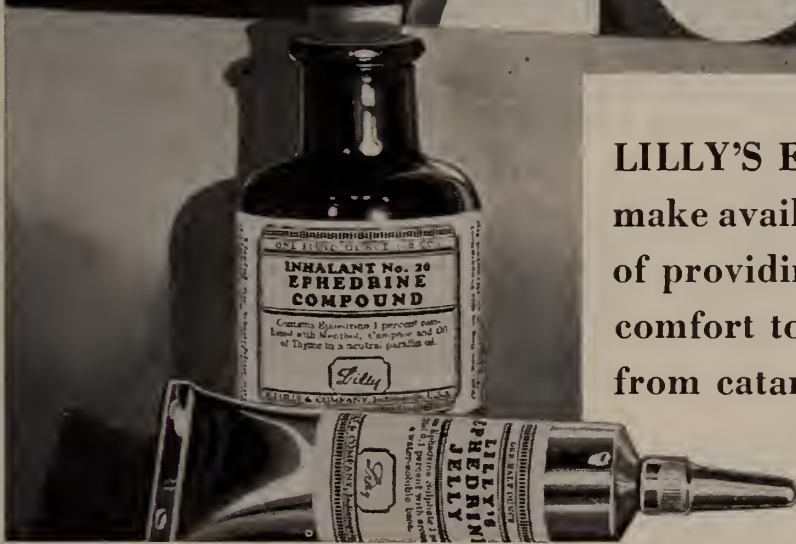
Doctor Cadman compares promiscuous kissing to the licking of salt by cattle. He might have added that the cattle always come back for more.—*Toledo Blade.*

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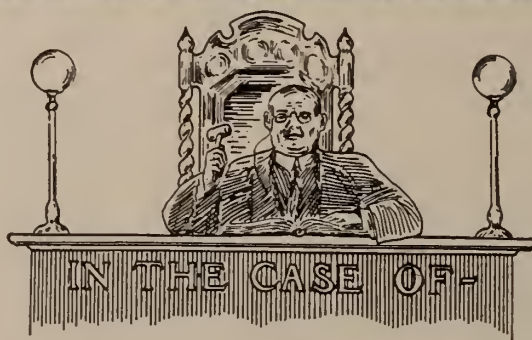
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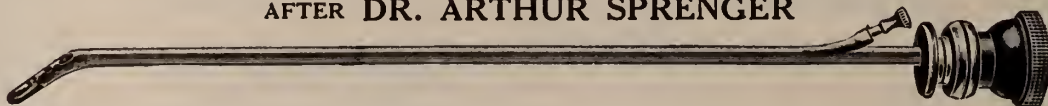
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THE fact that Mellin's Food modifications have a practically unlimited range of adjustment is also worthy of attention when constipation is caused by fat intolerance, or an excess of all food elements, or a daily intake of food far below normal requirements, for all such errors of diet are easily corrected by following the system of infant feeding that employs Mellin's Food as the milk modifier.

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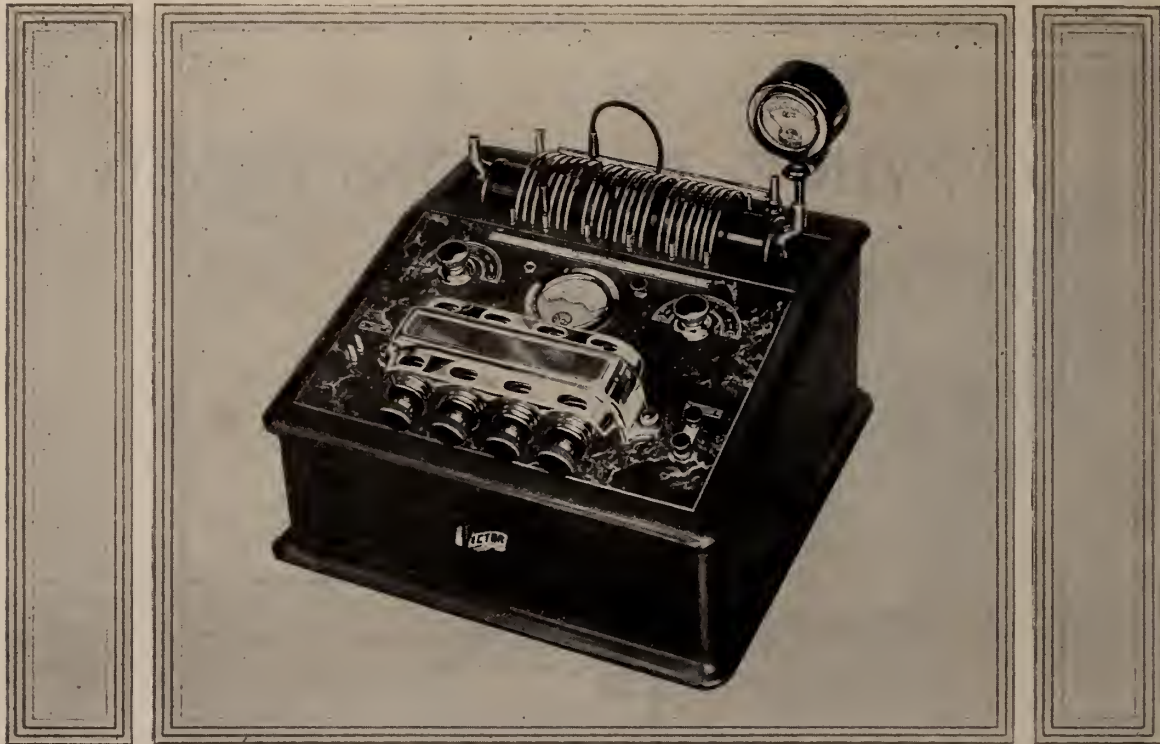
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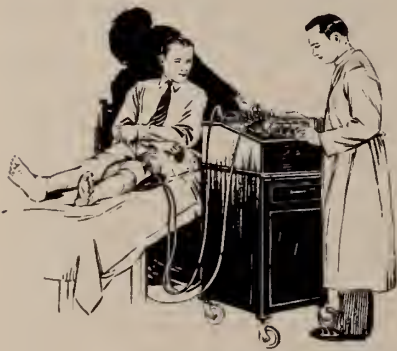
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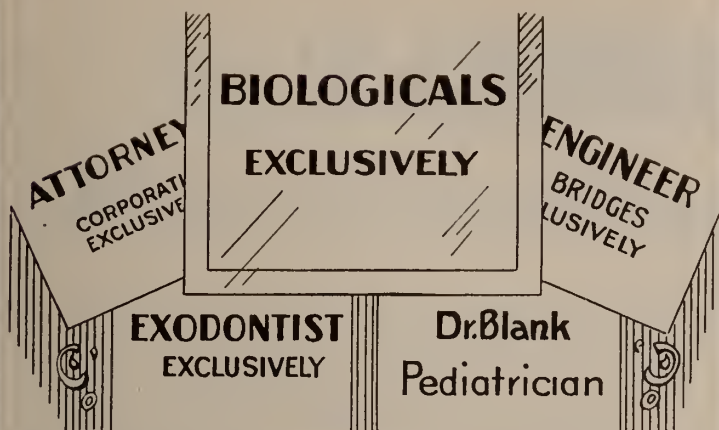
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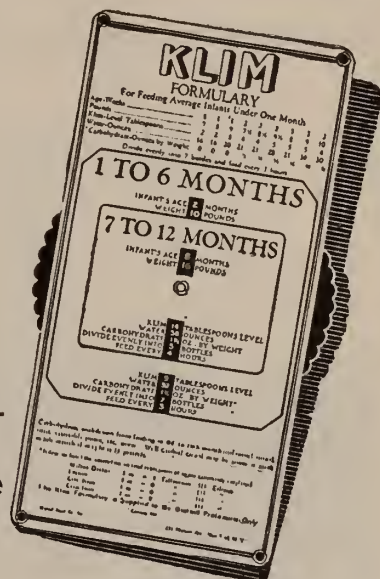
*One tablespoonful at bedtime
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What are the clinical applications of Pitocin? Mainly as a stimulant to the uterus

in labor when the uterine contractions are inadequate, and especially in cases where it would be unwise to increase blood pressure, or water retention, as in eclampsia or in cases having an eclamptic tendency.

Pitocin is administered in the same way and in the same dosage as *Pituitrin Obstetrical*. Each cubic centimeter contains 10 International Oxytocic Units, which is the oxytocic strength of *Pituitrin Obstetrical*.

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BiSoDoL has been found effective in controlling cyclic vomiting, the morning sickness of pregnancy, and alkalinizing against colds and respiratory affections.

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An Advertising Statement

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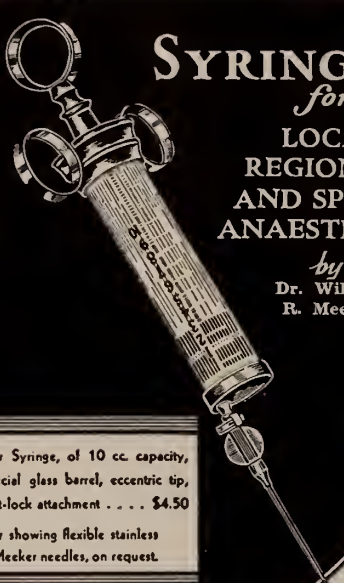
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Ole Olson, trackwalker, was testifying after a head-on collision. "You say," thundered the attorney, "at ten that night you were walking up toward Seven-Mile crossing and saw No. 8 coming down the track at sixty miles an hour?"

"Yah," said Ole.

"And when you looked behind you you saw No. 5 coming up the track at sixty miles an hour?"

"Yah," said Ole.

"Well, what did you do then?"

"Aye got off track."

"Well, but then what did you do?"

"Well, Aye said to myself, 'Dis bane hell of a way to run a railroad.'"

UNEXPECTED AND UNPREPARED

Colonel: "Rastus, I understand that you are the father of twins. What have you named them?"

"Well, suh, the fust Ah named Adagio Allegro, an' Ah'm gonne name the second one Encore."

"I know you're musical, Rastus, but why call the second one Encore?"

"Well, Colonel, suh, y'see he wasn't on the program at all."—J. A. M. A.

Wonder what orphaned foxes think when they see an antivivisectionist wearing their mother's coat?

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A "word to the wise"—should be sufficient and DISCRIMINATING PHYSICIANS having the interests of their patients at heart, will refer their cases to that Laboratory where they can obtain "THE BEST THERE IS".

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ALSO—we wish to remind our patrons about the ASCHEIM-ZONDEK PREGNANCY TEST. The more we work with it, the better we like it. Diagnosis PREGNANCY—irrespective of Duration, Location or Complications. We are the ONLY Laboratories in this section of the Country, sufficiently "up-to-date" to make this examination.

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SURGICAL CLINICS OF NORTH AMERICA (Mayo Clinic Number, Feb., 1930). Volume 10, No. 1. 174 pages with 82 illustrations. Paper, \$12.00 per clinic year. Cloth, \$16.00 per clinic year. (Issued serially, one number every other month.)

The contributors to this number are Drs. Balfour, Bowling, Broders, Caylor, Counseller, Craig, Dixon, Figi, Hamrick, Hartwell, Henderson, Horton, Judd, Lillie, Mann, Markowitz, Marshall, Masson, Charles Mayo, McIndoe, Meyerding, New, Smith, Williams, Wilson.

NASAL CATARRH. By W. Stuart-Low, M. D. With illustrations. London. H. K. Lewis & Co., Ltd. 1930.

This work represents the author's vast experience in many years of study and practice of the subject.

WHERE TO GO

"Dere Dokter—I got your leter about what I owe you. Now be pachunt. I ain't forgot you. Pless wate. When sum fools pay me I pay you. If this wuz judgment day and you wuz no more prepaired to meet your Maker as I am to meet your account you sure would have to go to hel. Trusting you will do this, I am
Yrs trully"

WHAT HE WOULD DO

John, lying on his hospital cot, was being given a bath. "Say," he began confidentially, "if you were going to get into a bath tub for a bath, and you found a great big horse in the bath tub, what would you do?"

"I don't know, John," replied his nurse, cheerfully, "taking another thin little hand. "What would you do?"

"I know what I'd do. I'd pull the plug out!"

Patient—"Doctor, let me know the worst."

Doctor (absent-mindedly)—"Your bill will be \$200."

THE MEDICAL RAVEN

Once upon a midnight dreary,
The doctor slumbered weak and weary,
And all the town could
Hear him snore.

While he lay there sweetly napping,
Suddenly there came a tapping
Like a ramgoat madly rapping
His hard head
Upon the door.

"Get thee up," a voice said loudly,
"Come in haste," it added proudly,
Like a man who owned a million—
Or much more.

But the doctor never heeded;
Back to dreamland fast he speeded,
For such men as that he needed
In his practice—
Nevermore.

For long months that man had owed him,
Not a cent he ever paid him,
And the doctor now will dose him—
Nevermore!

—Atlanta Med. Surg. Journal.

THE TRUTH

There is a story of a Scotch gentleman who had to dismiss his gardener for dishonesty. For the sake of the man's wife and family, however, he gave him a "character," and framed it in this way:

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—The Pathfinder.

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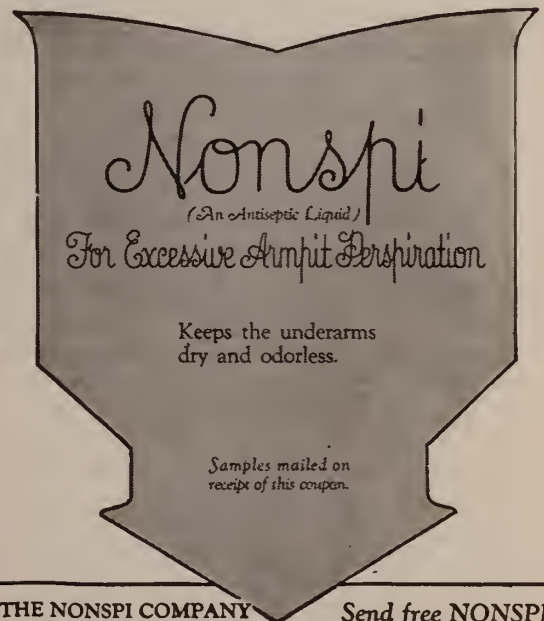
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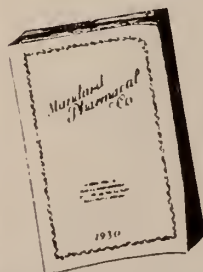
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It is evident asserts James M. Patton, Omaha (*Journal A. M. A.*, Oct. 19, 1929), that a laminated glass affords the maximum of ocular protection. When glasses are prescribed for younger children or for persons engaged in occupations with a high eye hazard and for all persons with but one useful eye, no matter what the age or occupation, it is advisable that this type should be prescribed. However, the tempered glass is much superior in protective value to ordinary optical glass and except for its tendency to splinter into sharp fragments is very acceptable. In spite of the fact that the laminating substance now in use is not absolutely free from slight imperfection, the high degree of protection afforded more than make up for this defect. A decided improvement in the quality of the laminating substance is noticeable, and it is likely that a perfectly satisfactory binder will soon be produced. No matter what type of lens is selected, it must be mounted in a comfortable, good-looking frame, if constant wear is to be expected.

**HEMATURIA AS SYMPTOM OF PREGNANCY
HYDRONEPHROSIS**

C. N. Swanson, Detroit (*Journal A. M. A.*, Nov. 16, 1929), has had the opportunity to observe and treat a patient with a marked hematuria which persisted

during the last four months of pregnancy and the first two weeks of the puerperium, in whom no pathologic change other than hydronephrosis could be detected after several careful urologic examinations. It would seem that serious disease of the genitourinary tract has been eliminated as a possible explanation for the hematuria in this patient, and that a blood dyscrasia has been ruled out equally well. Whatever hypothesis may be offered cannot be substantiated, but one is led to believe that the blood vessels (capillaries) in the kidney pelvis must have undergone some temporary alteration (passive congestion), which made them permeable to blood cells over a considerable period of time, while the definite time relationship to gestation suggests that the pregnancy was actually a causal factor. The occurrence of hematuria with hydronephrosis, especially during pregnancy, in both mother and daughter, suggests that this peculiarity may have been directly transmitted.

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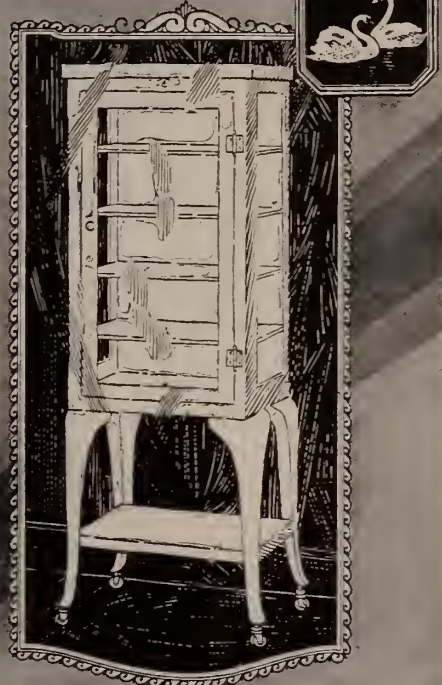
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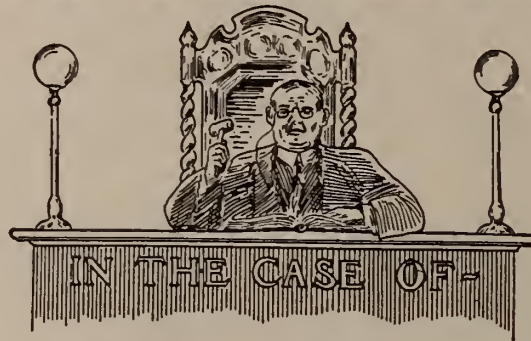
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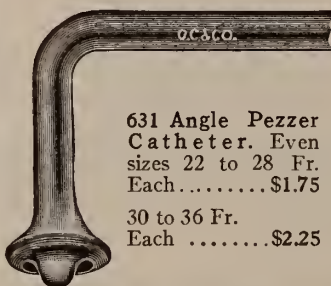
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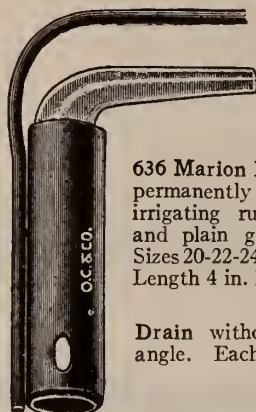
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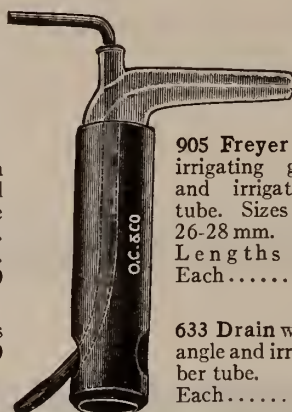


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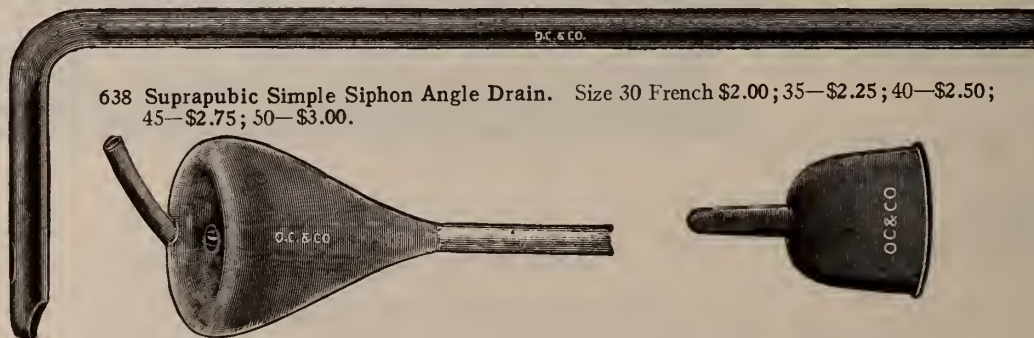
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ORDINARY iron tonics and pills are not well utilized in making hemoglobin. On the other hand, while spinach and other greens are a most wholesome source of blood iron, the difficulty is to induce delicate patients to eat enough to supply the body's needs.

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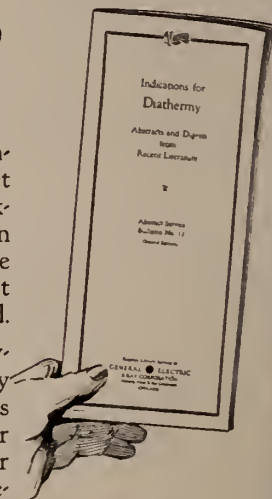
YOUR decision to use diathermy in the treatment of any condition will, of course, be based on recognized medical authority. Many physicians have become interested as a result of observing the many references to diathermy in current medical literature, and no doubt intend to investigate for themselves when opportunity presents. But a busy practice affords little of the time required in searching the files of the medical library, and it is put off indefinitely.

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If you number yourself among the physicians who have not adopted diathermy in practice, and desire to investigate this form of therapy in view of reaching your own conclusion as to its value in your practice, you will find this booklet a convenient reference.


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Injecting Tetanus Antitoxin U. S. S. P. as a routine practice for every wound in which skin continuity is destroyed — will eradicate tetanus.

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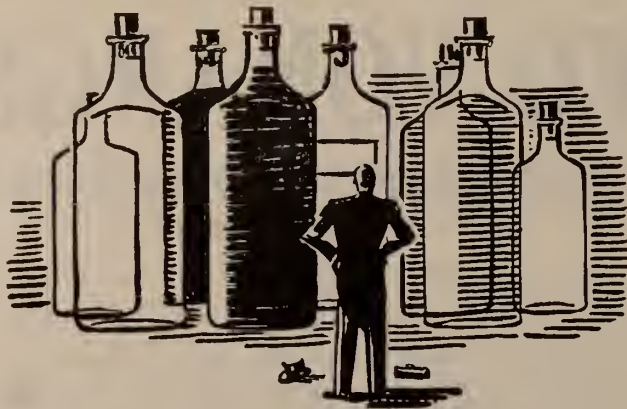
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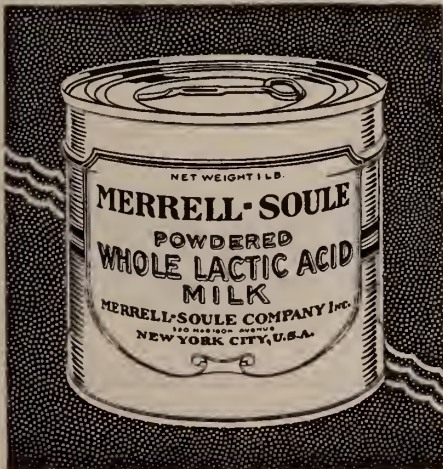
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PERNICIOUS
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*A principle
from stomach tissue that
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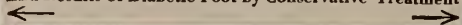
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by hastening the disintegration of the exudates and toxins and by stimulating cellular activity, is an appropriate topical application, producing definite physiological reactions, which are the basis of all healing.

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You may send me literature and sample of Antiphlogistine for clinical trial.

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Resolvent!

HAY FEVER

An Advertising Statement

HAY FEVER, as it occurs throughout the United States, is actually *perennial* rather than *seasonal*, in character.

Because in the Southwest—Bermuda grass, for instance, continues to flower until December when the mountain cedar, of many victims, starts to shed its pollen in Northern Texas and so continues into February. At that time, elsewhere in the South, the oak, birch, pecan, hickory and other trees begin to contribute their respective quotas of atmospheric pollen.

But, nevertheless, hay fever in the Northern States at least, is in fact seasonal in character and of three types, viz.:

TREE HAY FEVER—*March, April and May*

GRASS HAY FEVER—*May, June and July*

WEED HAY FEVER — *August to Frost*

And this last, the late summer type, is usually the most serious and difficult to treat as partly due to the greater diversity of late summer pollens as regionally dispersed.

With the above before us, as to the several types of regional and seasonal hay fever, it is important to emphasize that Arlco-Pollen Extracts *for diagnosis and treatment* cover adequately and accurately all sections and all seasons—North, East, South and West.

FOR DIAGNOSIS *each pollen is supplied in individual extract only.*

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ALSO FOR TREATMENT we have a few logically conceived and scientifically justified mixtures of biologically related and simultaneously pollinating plants. Hence, in these mixtures the several pollens are mutually helpful in building the desired group tolerance.

IF UNAVAILABLE LOCALLY THESE EXTRACTS
WILL BE DELIVERED DIRECT POST PAID
SPECIAL DELIVERY

*List and prices of food, epidermal, incidental and pollen
proteins sent on request*

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This psychoneurotic unit is a complete and separate hospital, elaborate in furnishings and fixtures.

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Administered by Mouth—No Contraindications

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In place of
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It stains, it penetrates and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

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BRIGHT red lips, dry body surface, marked exhaustion and low blood pressure, spell *acidosis* during labor.

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Book Reviews

THE UTERINE TUMORS. By Charles C. Norris, M. D. New York and London. Harper Bros., publishers. 1930. Price, \$3.00.

In this work the author goes extensively into the pathology of uterine tumors. The principle emphasis is laid on the diagnosis and treatment of these conditions and the symptoms are presented fully.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month) Volume 13,

Number 5. (Chicago Number, March, 1930.) Octavo of 207 pages with 17 illustrations. Per Clinic Year, July, 1929 to May, 1930. Paper, \$12.00; Cloth, \$16.00 Net. Philadelphia and London: W. B. Saunders Company, 1930.

The contributors to this number are Doctors Arkin, Birch, Brams, Calvin, Carr, Fenn, Finnerud, Friedman, Gerstley, Howell, Hutton, Jaffe, Keeton, Meyer, Nelson, Parker, Pilot, Pollock, Portis, Rosenberg, Strouse, Williamson.

CANCER OF THE BREAST. By William Crawford White, M. D. New York and London. 1930. Price \$3.00. Harper Bros. publishers. 1930. Price, \$3.00.

This volume treats adequately the subjects of Etiology, Symptomatology and Diagnosis, but devotes the larger part to treatment, not only by operative means but also by the more recently introduced x-ray and radium methods.

THE TREATMENT OF SKIN DISEASES IN DETAIL. By Noxon Toomey, M. D., St. Louis, U. S. A., Lister Building. The Lister Medical Press. 1930

This work represents the methods of treatment followed by the author in his private and dispensary practice in the past fifteen years.

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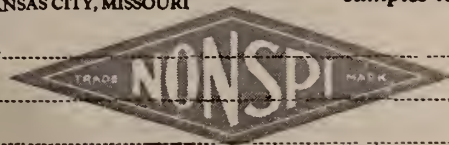
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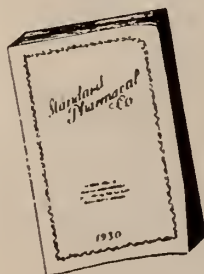
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(Continued on page 54)

(Continued from page 53)

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ARE THERE DIABETICS REFRACTORY TO INSULIN,—M. Labbé (*Progrès méd.*, No. 3:106, Jan. 15, 1927).

The author reviews the different cases in which insulin has been spoken of as powerless and shows that they were cases of renal diabetes, glycosuria due to hepatic insufficiency without true diabetes, glycosuria of endocrine origin (pituitary or thyroid), very benign cases of diabetes which did not require insulin treatment, true cases of diabetes undergoing an aggravation due to the influence of an acute or chronic infection, general anesthesia, etc. In the majority of cases, diet was poorly combined or not strictly adhered to. When confronted by one of these cases considered as refractory to insulin, the physician should first of all think of disobedience of the patient with regard to the regulations to be followed. Often, also, it is a question of insufficient dosage of insulin. This is what happens in very severe cases of diabetes or in diabetes aggravated by an infection.

Insulin positively is a powerful medicament exercising a definite physiologic effect, but without curative action so far as can be shown up to the present time. When applied knowingly it always takes effect. We know of no cases of true diabetes which are refractory to insulin.

ON THE FEMALE SEX HORMONE.—E. Laqueur (*Pharmazeut. Monatsh.*, 7:253, 1926).

The author reports on the physiological effect of the female sex hormone, produced by him in collaboration with his Dutch associates, Hart and de Jongh. In contrast to the earlier observations and in accord with the postulations of B. Zondek, the hormone is water soluble. The so-called unit is contained in at most 1/10 mgm. In addition to calling forth estrus in castrated animals, the specific effect on the growth of the female

sex organs is characteristic in senile animals, whereas the effect is just the opposite on male sex organs. An antimasculine effect, therefore, is present. The metabolism of female castrates is increased, that of males is, on the contrary, not increased; hence, a specificity here also.

FORCED ALIMENTATION WITH INSULIN.—E. Vogt (*Münchener med. Wchnschr.*, 73; No. 1, 1926).

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ON THE COURSE OF DEVELOPMENT OF A FORM OF LIPODYSTROPHY.—G. de Guglielmo (*Il Policlin.*, 33:1024, 1926).

The author describes a case of progressive lipodystrophy, which was remarkable for the unusual distribution of fat, the amount of which was decreased on the face, upper extremities and upper part of the thorax, where it was accumulated in considerable amounts in the hypogastrium, buttocks and upper part of the thighs. The basal metabolism was normal, adrenalin tests resulted positive. (Increase in pulse frequency, peripheral vasoconstriction, marked diuresis and glycosuria). For some time past, the patient had shown ovarian dysfunction and slight hyperthyroidism (slight tremor, changeable pulse, slight irritability and incapability to wrinkle the forehead.)

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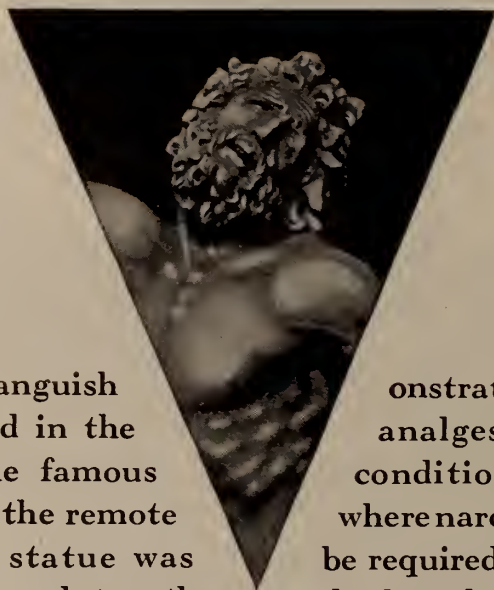
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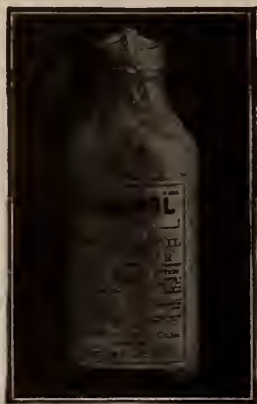
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	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoon Knox Sparkling Gelatine	7	6
1/4 cup cold water, 1 1/4 cups hot water
1 teaspoonful whole mixed spices	....	....	....	....	....
1/2 teaspoon salt, 1/4 cup vinegar	....	....	....	....	....
1/2 cup chopped cabbage	50	1	....	3	....
1/2 cup chopped celery	60	1	....	2	....
1/2 cup canned green peas	40	1	....	4	....
1/2 cup cooked beets, cubed	40	1	....	3	....

Total 10 12 88
One serving 2 2 15

Soak gelatine in cold water for five minutes. Bring to boil water, salt and spices. Pour on gelatine to dissolve it and add vinegar. When jelly is nearly set, stir in the vegetables, pour into mold and chill until firm. Unmold on lettuce and serve with salad dressing. Garnish with sprig of parsley or strip of pimento.

JELLIED CHICKEN IN CREAM (Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoonful Knox Gelatine	7	6	....	....	....
1/4 cup cold chicken broth or water	....	....	....	....	....
1 1/4 cups boiling chicken broth, fat free	....	....	....	....	....
1/2 teaspoon salt	....	....	....	....	....
Pinch pepper	....	....	....	....	....
1 cup cooked chicken, cubed	125	24	20	....	....
1/4 cup cream, whipped	55	1	22	1.5	....

Total 31 44 1.5 526
One serving 5 7 88

Soak gelatine in cold liquid for five minutes and dissolve in hot broth. Season with salt and pepper and chill until nearly set. Fold in chicken and whipped cream. Turn into molds and chill until firm. Serve on lettuce or garnish with parsley and strip of pimento.

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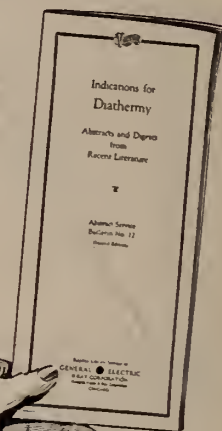
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
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Book Reviews

GYNECOLOGY FOR NURSES. By George Gellhorn, M. D., F. A. C. S., Professor of Gynecology and Obstetrics and Director of the Department, St. Louis University, School of Medicine, St. Louis, Mo. 12 mo. of 275 pages with 145 illustrations. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, \$2.00 net.

OBSTETRICS FOR NURSES. By Joseph B. DeLee, M. D., Professor of Obstetrics and Gynecology, University of Chicago, School of Medicine; Obstetrician to the Chicago Lying-In Hospital and Dispensary. New (9th) Edition, Revised. 12 mo. of 645 pages, with 269 illustrations. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, \$3.00 net.

In this work the author has included all the latest accepted advances in obstetrics and obstetric nursing. The chapter on infant feeding was entirely rewritten by two authorities on the subject.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 10, No. 2. (Chicago number, April, 1930.) 252 pages with 72 illustrations. Per clinic year (February, 1930, to December, 1930.) Paper, \$12.00; cloth, \$16.00. Philadelphia and London.

The contributors of this number are Doctors Bailey, Bettman, Busy, Christopher, Garrison, Gatewood, Guy, Hueper, Huggins, McWhorter, Miller, Portis, Rubin, Speed, David C. Straus.

ADOLESCENCE. STUDIES IN MENTAL HYGIENE. By Frankwood E. Williams, M. D. New York. Farrar & Rinehart. 1930. Price, \$2.50.

MANUAL OF PHYSICAL AND CLINICAL DIAGNOSIS. By Dr. Otto Seifert and Dr. Frederick Mueller. Authorized translation by E. Cowles Andrus, M. D. 40 illustrations and 3 colored plates. Philadelphia and London. J. B. Lippincott Company. 1930. Price, \$6.00.

In this work certain editions have been made to include procedures to which the American student and physicians are accustomed: blood chemistry, staining methods, etc., all temperature charts have been furnished with the Fahrenheit scale in addition to the centigrade of the German edition.

DISEASES OF THE NOSE, THROAT AND EAR, MEDICAL AND SURGICAL. By William Lincoln Ballenger, M. D. Revised by Howard Charles Ballenger, M. D. Sixth edition. Thoroughly revised. Illustrated with 583 engravings and 29 plates. Philadelphia. Lea & Febiger. 1930. Price, \$11.00 net.

In this work there has been much revision and rearrangements and a partial rewriting of various portions, particularly the chapters devoted to the sinuses, suppurative otitis media and mastoiditis. Additional subjects which were absent from preceding additions have been inserted. The work has been brought thoroughly up to date.

Book Reviews

ALIMENTARY ANAPHYLAXIS. By Guy Larocche, Charles Richet Fils and Francois Saint-Girons. Translated by Mildred P. and Albert H. Rowe. University of California Press. 1930. Price, \$2.00.

This work is the first extended contribution and summary of Gastro-allergy, it contains much information which is not appreciated today by the average physician. The frequency of food allergy is becoming more and more evident and physicians will profit by a study of this subject in an up-to-date treatise like this work.

OBSTETRICS FOR NURSES. By Charles B. Reed, M. D. and Charlotte L. Gregory, R. N., M. D. One hundred and forty-four illustrations including two color plates. Third edition. St. Louis. C. V. Mosby Company. 1930. Price, \$3.00.

In this edition the author has eliminated outworn theories and practices and limited the descriptions to such methods as he has found efficient. This work should fulfill perfectly the purpose for which it was intended.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. By J. J. R. MacLeod, M. B., LL.D., D. Sc., F. R. S. Sixth edition with 295 illustrations including 9 plates in colors. St. Louis. The C. V. Mosby Company. 1920. Price, \$11.00.

Steady increase in general knowledge, rather than discovery, has been the feature of the advances in physiology during the past three years, so that the changes in the present edition are spread throughout the volume. Much new material has been added, the size of the volume remains unchanged.

MINOR SURGERY. By Arthur E. Hertzler, M. D., and Victor E. Chesky, M. D. Second edition. With 475 illustrations. St. Louis. The C. V. Mosby Company. 1930. Price, \$10.00.

This edition remains essentially the same as the previous one with additions and corrections of the text and the addition of 37 illustrations.

The chief stress in this book has been placed upon the recognition of lesions while they are yet minor.

INFANT NUTRITION. A text book of infant feeding for students and practitioners of medicine. By Williams McKim Marriott, M. D. Illustrated. St. Louis. The C. V. Mosby Company. 1930. Price, \$5.50.

In this work the author summarizes present day knowledge concerning the nutritional requirements of infants under normal and pathological conditions and to indicate the effect of failure to meet any and all of these requirements.

A chapter has been included on the results of feeding on the growth and development of infants and normal growth and development.

ACIDITY OF DUODENAL CONTENTS.—Lay Martin (*Archives of Internal Medicine*, 39:275, Feb. 15, 1927).

After an instillation of magnesium sulphate through a tube directly into the duodenum, the resultant secretion is usually slightly acid. Usually the duodenal contents tend to become more acid the longer the tube is left there. There may be periods of neutrality or even alkalinity. The normal duodenal contents are nearly neutral, but under any digestive procedure they are likely to become acid, and the lowness of the p is probably related to the tone of the pylorus sphincter: whether it is to be constantly acid or whether periods of acidity and neutrality will alternate. Even in gastric achylia the duodenal contents are at times acid. Active pancreatic enzymes are found, however, before this chemical change is brought about. They are found in the alkaline fraction.

THE SIGNIFICANCE OF THYROID ENLARGEMENT DURING PREGNANCY.—J. William Hinton (*American Journal of Obstetrics and Gynecology* 13:204, February, 1927).

A certain percentage of thyroid diseases can be eliminated if the condition is recognized early. During pregnancy the thyroid gland enlarges in a definite percentage of patients. It varies in different localities, and it is estimated that anywhere from 25 per cent to 80 per cent of pregnant women have a thyroid dysfunction. The obstetrician should recognize and treat this condition during pregnancy. Colloid is the one type most frequently encountered during pregnancy. It is curable by administering iodine or thyroid extract. By treating the colloid goiter adenoma can be prevented from occurring later. The elimination of adenomas greatly reduces the incidence of thyroid malignancy.

THE SPECIAL SENSE ORGANS AND THEIR RELATION TO THE PSYCHOSES.—George E. Davis (*New York State Journal of Medicine*, 27:708, June 1, 1927).

Davis writes of the disposition to rely on psychoanalysis in examining the insane. Physical investigation often receives little attention, the psychoses being attributed to some gradual, prolonged mental strain or to some overwhelming emotional disturbance rather than to somatic lesions or perverted body functions. Probably the somatic toxemias and perverted endocrine functions play a greater role in the etiology of the psychoses than is generally thought. It cannot be too strongly stressed that the diagnosis and treatment of the psychoses embrace a mutual consideration of the intimate interrelation and interaction of mind and body and that all investigations, and therapy should be conducted accordingly.

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(Continued from page 44)

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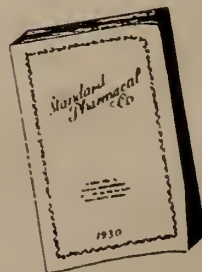
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